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=> d all hitstr tot

L108 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:286255 HCAPLUS
DN 137:24678
TI Method for the calculation of ion exchange properties of **hydroxyl**
- and fluoroapatites in aqueous solutions of various cationic and anionic
compositions
AU Dobrygnev, S. V.; Bykov, A. P.; Bogach, V. V.; Beskov, V. S.
CS Novomosk. Inst. RKhTU im. D. I. Mendeleeva, Novomoskovsk, Russia
SO Khimicheskaya Promyshlennost (Moscow, Russian Federation) (2002), (2),
44-50
CODEN: KPRMAW; ISSN: 0023-110X
PB Izdatel'stvo "TEZA"
DT Journal
LA Russian
CC 66-4 (Surface Chemistry and Colloids)
AB Two alternative methods were developed for calcg. the Gibbs energy of
formation of surface compds. during ion exchange. Based on the results of
such calcns. series of cations and anions were detd. according to their
capability to substitute in aq. solns. of electrolytes for Ca²⁺,
OH⁻, and F⁻ in **hydroxyl**- and fluoroapatites. The Ca²⁺,
OH⁻, and F⁻ ion exchange properties were calcd. for
calcium apatites of various compns.
ST ion exchange hydroxylapatite fluoroapatite surface compd
IT Free energy of formation
Ion exchange
Surface reaction
(method for the calcn. of ion exchange properties of **hydroxy**-
and fluoroapatites in aq. solns. of various cationic and anionic
compns.)
IT 471-34-1, Calcium carbonate, processes
513-77-9, Barium carbonate 546-93-0, Magnesium
carbonate 1305-62-0, Calcium hydroxide
, processes 1306-05-4, Fluorapatite (Ca₅F(PO₄)₃)

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Reference Librarian
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1306-06-5, Hydroxylapatite 1309-42-8,
 Magnesium dihydroxide 1317-37-9, Iron sulfide FeS 7487-88-9,
 Magnesium sulfate, processes 7720-78-7 7727-43-7, Barium
 sulfate 7758-94-3, Iron dichloride 7778-18-9, Calcium
 sulfate 7783-40-6, Magnesium difluoride 7783-46-2,
 Lead difluoride 7783-48-4, Strontium difluoride 7783-49-5, Zinc
 difluoride 7786-30-3, Magnesium chloride, processes
 7787-32-8, Barium difluoride 7789-28-8, Iron difluoride
 7789-41-5, Calcium bromide 7789-46-0, Iron dibromide
 7789-48-2, Magnesium bromide 7789-75-5,
 Calcium fluoride, processes 10022-31-8, Barium nitrate
 10043-52-4, Calcium chloride, processes
 10124-37-5, Calcium nitrate 10290-71-8, Iron
 carbonate 10361-37-2, Barium chloride, processes
 10377-60-3, Magnesium nitrate 10553-31-8,
 Barium bromide 12032-36-9, Magnesium sulfide 13780-06-8,
 Calcium nitrite 14013-86-6, Iron dinitrate
 15070-34-5, Magnesium nitrite 17194-00-2, Barium hydroxide
 18480-07-4, Strontium dihydroxide 18488-91-0, Iron nitrite 18624-44-7,
 Iron dihydroxide 19783-14-3, Lead dihydroxide 20427-58-1, Zinc
 dihydroxide 20548-54-3, Calcium sulfide 21109-95-5, Barium
 sulfide

RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)

(method for the calcn. of ion exchange properties of hydroxy-
 and fluoroapatites in aq. solns. of various cationic and anionic
 compns.)

IT 12015-72-4, Calcium chloride phosphate (Ca₅Cl(PO₄)₃) 12015-73-5, Calcium fluoride phosphate
 (Ca₅F(PO₄)₃) 12069-38-4, Calcium carbonate
 phosphate (Ca₁₀(CO₃)(PO₄)₆) 12133-38-9,
 Calcium fluoride hydroxide phosphate (Ca₁₀F(OH)
)(PO₄)₆) 12167-74-7, Calcium
 hydroxide phosphate (Ca₅(OH)(
 PO₄)₃) 12394-20-6, Calcium chloride fluoride
 phosphate (Ca₁₀ClF(PO₄)₆) 12514-27-1, Calcium
 bromide phosphate (Ca₅Br(PO₄)₃) 12514-95-3,
 Calcium strontium hydroxide phosphate (Ca₉Sr(OH)
)₂(PO₄)₆) 55964-49-3, Calcium phosphate
 sulfide (Ca₁₀(PO₄)₆S) 56626-74-5, Calcium strontium
 fluoride phosphate (Ca₉SrF₂(PO₄)₆) 117003-84-6,
 Calcium chloride hydroxide phosphate (Ca₅Cl_{0.5}(
 OH)_{0.5}(PO₄)₃) 125913-73-7, Calcium
 phosphate sulfate (Ca₁₀(PO₄)₆(SO₄)) 199581-80-1,
 Calcium lead fluoride phosphate (Ca₉PbF₂(PO₄
)₆) 220960-92-9, Calcium lead hydroxide phosphate
 (Ca₉Pb(OH)₂(PO₄)₆) 303955-02-4,
 Calcium magnesium hydroxide phosphate
 (Ca₉Mg(OH)₂(PO₄)₆) 374809-26-4, Calcium
 nitrate phosphate (Ca₅(NO₃)(PO₄)₃)
 434934-12-0, Barium calcium hydroxide
 phosphate (BaCa₉(OH)₂(PO₄)₆) 434934-13-1,
 Calcium iron hydroxide phosphate (Ca₉Fe(OH)₂(
 PO₄)₆) 434934-15-3, Calcium zinc hydroxide
 phosphate (Ca₉Zn(OH)₂(PO₄)₆) 434934-16-4,
 Barium calcium fluoride phosphate (BaCa₉F₂(PO₄
)₆) 434934-17-5, Calcium iron fluoride phosphate
 (Ca₉FeF₂(PO₄)₆) 434934-18-6, Calcium
 magnesium fluoride phosphate (Ca₉MgF₂(PO₄)₆)
 434934-19-7, Calcium zinc fluoride phosphate (Ca₉ZnF₂(
 PO₄)₆) 434934-21-1, Calcium nitrite phosphate
 (Ca₅(NO₂)(PO₄)₃) 434934-22-2, Calcium fluoride
 nitrate phosphate (Ca₁₀F(NO₃)(PO₄)₆)

434934-23-3, Calcium fluoride nitrite phosphate
 (Ca10F(NO2)(PO4)6) 434934-24-4, Calcium bromide
 fluoride phosphate (Ca10BrF(PO4)6) 434934-25-5,
 Calcium hydroxide nitrate phosphate
 (Ca10(OH)(NO3)(PO4)6) 434934-27-7,
 Calcium bromide hydroxide phosphate (Ca10Br(OH)
)(PO4)6) 434934-28-8, Calcium hydroxide
 nitrite phosphate (Ca10(OH)(NO2)(PO4)6)

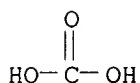
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (method for the calcn. of ion exchange properties of hydroxy-
 and fluoroapatites in aq. solns. of various cationic and anionic
 comps.)

IT 471-34-1, Calcium carbonate, processes
 546-93-0, Magnesium carbonate
 1305-62-0, Calcium hydroxide, processes
 1306-06-5, Hydroxylapatite 1309-42-8,
 Magnesium dihydroxide 7783-40-6, Magnesium
 difluoride 7786-30-3, Magnesium chloride, processes
 7789-41-5, Calcium bromide 7789-48-2,
 Magnesium bromide 7789-75-5, Calcium fluoride,
 processes 10043-52-4, Calcium chloride, processes
 10124-37-5, Calcium nitrate 10377-60-3
 , Magnesium nitrate

RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); PROC (Process)
 (method for the calcn. of ion exchange properties of hydroxy-
 and fluoroapatites in aq. solns. of various cationic and anionic
 comps.)

RN 471-34-1 HCAPLUS

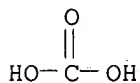
CN Carbonic acid calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



Ca

RN 546-93-0 HCAPLUS

CN Carbonic acid, magnesium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



Mg

RN 1305-62-0 HCAPLUS

CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)



RN 1306-06-5 HCAPLUS

CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 1309-42-8 HCAPLUS
CN Magnesium hydroxide (Mg(OH)2) (9CI) (CA INDEX NAME)

HO-Mg-OH

RN 7783-40-6 HCAPLUS
CN Magnesium fluoride (MgF2) (9CI) (CA INDEX NAME)

F-Mg-F

RN 7786-30-3 HCAPLUS
CN Magnesium chloride (MgCl2) (9CI) (CA INDEX NAME)

Cl-Mg-Cl

RN 7789-41-5 HCAPLUS
CN Calcium bromide (CaBr2) (9CI) (CA INDEX NAME)

Br-Ca-Br

RN 7789-48-2 HCAPLUS
CN Magnesium bromide (MgBr2) (9CI) (CA INDEX NAME)

Br-Mg-Br

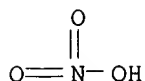
RN 7789-75-5 HCAPLUS
CN Calcium fluoride (CaF2) (9CI) (CA INDEX NAME)

F-Ca-F

RN 10043-52-4 HCAPLUS
CN Calcium chloride (CaCl2) (9CI) (CA INDEX NAME)

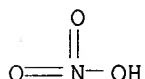
Cl-Ca-Cl

RN 10124-37-5 HCAPLUS
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 10377-60-3 HCAPLUS
 CN Nitric acid, magnesium salt (8CI; 9CI) (CA INDEX NAME)



1/2 Mg

IT 12167-74-7, Calcium hydroxide
 phosphate (Ca5(OH)(PO4)3)
 303955-02-4, Calcium magnesium
 hydroxide phosphate (Ca9Mg(OH)2(PO4)
)6)
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (method for the calcn. of ion exchange properties of **hydroxy-**
 and fluoroapatites in aq. solns. of various cationic and anionic
 comps.)
 RN 12167-74-7 HCAPLUS
 CN Calcium hydroxide phosphate (Ca5(OH)(PO4)3) (7CI, 8CI, 9CI) (CA INDEX
 NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 303955-02-4 HCAPLUS
 CN Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) (9CI) (CA INDEX
 NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9	7440-70-2
Mg	1	7439-95-4

L108 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 2001:658827 HCAPLUS

DN 136:330502

TI Precipitation of **magnesium apatite** on pure
magnesium surface during immersing in Hank's solution

AU Kuwahara, Hideyuki; Al-Abdullat, Yousef; Mazaki, Naoko; Tsutsumi, Sadami;
 Aizawa, Tatsuhiko

- CS Research Institute for Applied Sciences, Kyoto, 606-8202, Japan
 SO Materials Transactions (2001), 42(7), 1317-1321
 CODEN: MTARCE; ISSN: 1345-9678
 PB Japan Institute of Metals
 DT Journal
 LA English
 CC 63-7 (Pharmaceuticals)
 AB A new artificial bone concept by **magnesium** alloys is proposed to think much importance on its homogenization with a surrounding natural hard and soft tissue. **Magnesium** is an essential element for human body, so that **magnesium** bone implants can be expected to be toxicity free even though **magnesium** dissolved into human soft tissue. In addn., **magnesium** base artificial bone has vivo-adaptively to growing bone cells once vivo-coating is formed on the surface of **magnesium** in the inside of soft tissue. In the present paper, its chem. behavior in Hank's soln. (HBSS (+)) is described to simulate biochem. reactions of **magnesium** in the human body. An effect of heat treatment of **magnesium** on its chem. behavior is also investigated. Specimens of 10.times.20 .times. 2 mm3 were used for examg. chem. behaviors of com. grade pure **magnesium** (3N-Mg) in a HBSS (+) for various holding time (25-700 h). Specific mass gain of each specimen was measured, the surface microstructure was obsd. by a scanning electron microscope, identification of reaction products were examd. by x-ray diffraction measurements. Chem. compns. of reaction products were also analyzed by an energy dispersion x-ray spectrometry. Mass change of heat-treated 3N-Mg, which was heat-treated at 803 K for 90 ks increased with immersing time in HBSS (+) though that of other heat-treated 3N-Mg unstably decreased in HBSS (+). **Magnesium** reacted with HBSS (+) and then a **magnesium apatite** was pptd. on the heat-treated 3N-Mg specimen surface. The **magnesium apatite** should be described as $(Ca_{0.86}Mg_{0.14})_{10}(PO_4)_6(OH)_2$.
- ST **magnesium apatite** bone implant
 IT Bone
 (artificial; pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
 IT Prosthetic materials and Prosthetics
 (implants; pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
 IT Heat treatment
 (pptn. of **magnesium apatite** on pure **magnesium** surface during immersing in Hank's soln.)
 IT **Apatite**-group minerals
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
 IT 7439-95-4, **Magnesium**, biological studies
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
 (pptn. of **magnesium apatite** on pure **magnesium** surface during immersing in Hank's soln.)
 IT 412319-78-9, **Calcium magnesium hydroxide phosphate** $(Ca_{4.3}Mg_{0.7}(OH)(PO_4)_3)$
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
- RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 RE
 (1) Anon; Private communication from K Suzuki 1999
 (2) Anon; <http://www.bioceram.ne.jp>

- (3) Anon; <http://www.kobelco.co.jp/p042/p042e.htm>
 (4) Anon; <http://www.ngkntk.co.jp/>
 (5) Kawamura, Y; Mater Sci Forum 2000, V350-351, P111 HCAPLUS
 (6) Kawamura, Y; Mater Sci Forum 2000, V3500-351, P117
 (7) Kim, H; J Ceramic Soc of Japan 1997, V105, P111 HCAPLUS
 (8) Koike, J; Mater Sci Forum 2000, V350-351, P105 HCAPLUS
 (9) Kokubo, T; Chemistry and Industry 1983, V36, P533 HCAPLUS
 (10) Kokubo, T; Materials Intergration 1999, V12, P39 HCAPLUS
 (11) Kurokawa, M; J Jpn Plastic and Reconstructive Surgery Soc 1994, V14, P238
 (12) Kurokawa, M; J Jpn Plastic and Reconstructive Surgery Soc 1994, V16, P75
 (13) Kuwahara, H; Mater Sci Forum 2000, V350-351, P349 HCAPLUS
 (14) Okazaki, M; Chemistry of apatite for construction of tooth and bone (in Japanese) 1992, P10
 (15) Suda, T; Science of bone (in Japanese) 1993, P121
 (16) Wen, C; Proc Thermec2000, in press 2000
 IT 7439-95-4, **Magnesium**, biological studies
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); THU (Therapeutic use); BIOL (Biological study); PROC (Process); USES (Uses)
 (pptn. of **magnesium apatite** on pure **magnesium** surface during immersing in Hank's soln.)
 RN 7439-95-4 HCAPLUS
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

- IT 412319-78-9, **Calcium magnesium hydroxide phosphate** (Ca₄.3Mg_{0.7}(OH)(PO₄)₃)
 RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (pptn. of **magnesium apatite** on pure **magnesium** surface for bone implants)
 RN 412319-78-9 HCAPLUS
 CN Calcium magnesium hydroxide phosphate (Ca₄.3Mg_{0.7}(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4.3	7440-70-2
Mg	0.7	7439-95-4

- L108 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 2001:621137 HCAPLUS
 DN 136:8516
 TI Synthesis of **Ca-Mg apatite** via a mechanochemical hydrothermal process
 AU Liao, Jiefan; Hamada, Kenji; Senna, Mamoru
 CS Nara Machinery Co., Ltd., Tokyo, 143-0002, Japan
 SO Journal of Materials Synthesis and Processing (2000), 8(5/6), 305-311
 CODEN: JMSPEI; ISSN: 1064-7562
 PB Kluwer Academic/Plenum Publishers
 DT Journal
 LA English
 CC 49-4 (Industrial Inorganic Chemicals)
 Section cross-reference(s): 63
 AB Mixts. of **calcium** and **magnesium hydroxides** and **calcium dihydrogen phosphate** in various molar

ratios were ground in water with a fine grinding machine, which features multi-ring grinding media. Mechanochem. amorphization of the mixts. occurs quickly by grinding. The mixts., after grinding for 5, 20, and 60 min, were then subjected to hydrothermal treatment at 573 K for 24 h. The influence of $Mg/(Mg + Ca)$ molar ratio on the thermal behavior of the mech. activated powders and the structure of the final products has been investigated. The microhomogeneity of Mg, Ca, and P elements on the samples is enhanced by the mechanochem. treatment. A shift in the x-ray diffraction peaks was obsd. among the final products with different grinding times, presumably due to a partial substitution of calcium by magnesium.

ST calcium magnesium apatite synthesis
mechanochem hydrothermal process

IT 1305-62-0, Calcium hydroxide, processes
1306-06-5D, Hydroxylapatite, magnesium-contg.
1309-42-8, Magnesium hydroxide
7758-23-8, Calcium dihydrogen phosphate
303955-04-6, Calcium magnesium
hydroxide phosphate $[Ca_4Mg(OH)(PO_4)_3]$
303955-05-7, Calcium magnesium
hydroxide phosphate $[Ca_5Mg_5(OH)_2(PO_4)_6]$
374930-58-2, Calcium magnesium
hydroxide phosphate $(Ca_{1.5}Mg_{3.5}(OH)(PO_4)_3)$

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(synthesis of calcium magnesium apatite
by mechanochem. hydrothermal process)

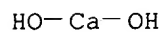
RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

- (1) Aizawa, M; Mater Res Bull 1999, V34, P1215 HCAPLUS
 - (2) Bigi, A; Acta Crystallogr 1996, VB52, P87 HCAPLUS
 - (3) Chaikina, M; Chem Sustainable Develop 1998, V6, P135
 - (4) Chiranjeevirao, S; Inorg Chim Acta 1982, V67, P183 HCAPLUS
 - (5) Hamada, K; J Mater Sci 1996, V31, P1725 HCAPLUS
 - (6) Hashimoto, K; Phosphorus Lett 1999, V34, P16 HCAPLUS
 - (7) Heinicke, G; Tribochemistry 1984, P303
 - (8) Kanazawa, T; Inorganic Phosphorus Chemistry 1985, P79
 - (9) Klement, R; Z Anorg Allg Chem 1995, V336, P113
 - (10) Komatsubara, S; J Amer Ceram Soc 1994, V77, P278 HCAPLUS
 - (11) Liao, J; Chem Sustainable Develop 1998, V6, P233
 - (12) Liao, J; Thermochim Acta 1992, V197, P295 HCAPLUS
 - (13) Monma, H; Challenging to Future Advanced Materials Aiming for Intelligence and Harmonization 1995, V1, P561
 - (14) Motooka, I; Topics in Phosphorus Chemistry 1980, V10, P171 HCAPLUS
 - (15) Okazaki, M; J Osaka Univ Dent School 1994, V34, P73 HCAPLUS
 - (16) Sasaki, K; Inorg Mater 1998, V5, P275 HCAPLUS
 - (17) Sekino, S; Mater Sci Forum 1999, V312-314, P363 HCAPLUS
 - (18) Senna, M; Solid State Ionics 1993, V63-65, P3 HCAPLUS
 - (19) Serre, C; J Biomed Mater Res 1998, V42, P626 HCAPLUS
 - (20) Shuk, P; J Amer Ceram Soc in press
 - (21) Toyama, T; Phosphorus Lett 2000, V37, P33 HCAPLUS
 - (22) Yasukawa, A; J Mater Chem 1996, V6, P1401 HCAPLUS
- IT 1305-62-0, Calcium hydroxide, processes
1306-06-5D, Hydroxylapatite, magnesium-contg.
1309-42-8, Magnesium hydroxide
7758-23-8, Calcium dihydrogen phosphate
303955-04-6, Calcium magnesium
hydroxide phosphate $[Ca_4Mg(OH)(PO_4)_3]$
303955-05-7, Calcium magnesium
hydroxide phosphate $[Ca_5Mg_5(OH)_2(PO_4)_6]$
374930-58-2, Calcium magnesium
hydroxide phosphate $(Ca_{1.5}Mg_{3.5}(OH)(PO_4)_3)$

RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (synthesis of **calcium magnesium apatite**
 by mechanochem. hydrothermal process)

RN -1305-62-0 HCAPLUS

CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)



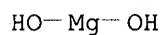
RN 1306-06-5 HCAPLUS

CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

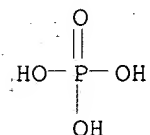
RN 1309-42-8 HCAPLUS

CN Magnesium hydroxide (Mg(OH)2) (9CI) (CA INDEX NAME)



RN 7758-23-8 HCAPLUS

CN Phosphoric acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 303955-04-6 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca4Mg(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4	7440-70-2
Mg	1	7439-95-4

RN 303955-05-7 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca5Mg5(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2

Ca		5		7440-70-2
Mg		5		7439-95-4

RN 374930-58-2 HCAPLUS
 CN Calcium magnesium hydroxide phosphate (Ca1.5Mg3.5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	1.5	7440-70-2
Mg	3.5	7439-95-4

L108 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 2000:641080 HCAPLUS

DN 133:338788

TI Characterization of the **magnesium**-substituted

hydroxyapatite prepared by ultrasonic spray-pyrolysis technique

AU Hanazawa, Takashi; Aizawa, Mamoru; Howell, F. Scott; Itatani, Kiyoshi

CS Department of Chemistry, Faculty of Science and Engineering, Sophia University, Tokyo, 102-8554, Japan

SO Phosphorus Research Bulletin (1999), 9, 5-10

CODEN: PREBE7; ISSN: 0918-4783

PB Japanese Association of Inorganic Phosphorus Chemistry

DT Journal

LA English

CC 57-2 (Ceramics)

Section cross-reference(s): 63

AB **Magnesium**-substituted **hydroxyapatite** (Mg

-HAp) powders with formula, Ca_{10-x}Mg_x(PO₄)₆(OH)₂,

where x = 0, 0.25, 0.5, 0.75, 1, 1.5, 2, 5 and 10, were prep'd. by spray-pyrolyzing aq. solns. in the Ca(NO₃)₂-Mg

(NO₃)₂-(NH₄)₂HPO₄-HNO₃ system. Although only the

hydroxyapatite (HAp) was present in the case of x = 0, .beta.-

tricalcium phosphate (.beta.-TCP) formed with increasing

x value. Only .beta.-TCP was present in the case of x = 1.5; however, it was gradually changed into the amorphous phase with a further increase in x value. The data on lattice consts. of the HAp and/or .beta.-TCP in the range of x = 0 to 1 showed that the Mg²⁺ ions could be substituted with the Ca²⁺ ions in HAp; the max. substituted amt. was estd. to be .apprx.7.7 mol%.

ST **magnesium** substituted **hydroxyapatite** prepn ultrasonic spray pyrolysis

IT Powders

Powders

(ceramic, **magnesium**-substituted **hydroxyapatite**;

characterization of **magnesium**-substituted

hydroxyapatite prep'd. by ultrasonic spray-pyrolysis technique)

IT Ceramics

Ceramics

(powders, **magnesium**-substituted **hydroxyapatite**;

characterization of **magnesium**-substituted

hydroxyapatite prep'd. by ultrasonic spray-pyrolysis technique)

IT Calcination

(spray, ultrasonic; characterization of **magnesium**-substituted

hydroxyapatite prep'd. by ultrasonic spray-pyrolysis technique)

IT 303954-99-6P, Calcium magnesium
 hydroxide phosphate (Ca_{9.75}Mg_{0.25}(OH)₂(
 PO₄)₆) 303955-00-2P, Calcium magnesium
 hydroxide phosphate (Ca_{9.5}Mg_{0.5}(OH)₂(

PO4)6) 303955-01-3P, Calcium magnesium
hydroxide phosphate (Ca_{9.25}Mg_{0.75}(OH)₂(
PO4)6) 303955-02-4P, Calcium magnesium
hydroxide phosphate (Ca₉Mg(OH)₂(PO4
)6) 303955-03-5P, Calcium magnesium
hydroxide phosphate (Ca_{8.5}Mg_{1.5}(OH)₂(
PO4)6) 303955-04-6P, Calcium magnesium
hydroxide phosphate (Ca₄Mg(OH)(PO4
)3) 303955-05-7P, Calcium magnesium
hydroxide phosphate (Ca₅Mg₅(OH)₂(PO4
)6)

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(characterization of **magnesium**-substituted
hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

IT 11089-13-7P, Magnesium hydroxide phosphate
(Mg₁₀(OH)₂(PO4)6)

RL: SPN (Synthetic preparation); PREP (Preparation)
(characterization of **magnesium**-substituted
hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

IT 12167-74-7P, Calcium hydroxide
phosphate (Ca₁₀(OH)₂(PO4)6)

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**hydroxyapatite** phase; characterization of **magnesium**
-substituted **hydroxyapatite** prepd. by ultrasonic
spray-pyrolysis technique)

IT 7758-87-4, .beta.-Tricalcium phosphate

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(.beta.-phase; characterization of **magnesium**-substituted
hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Aizawa, M; J Ceram Soc 1996, V104, P126 HCAPLUS
- (2) Aizawa, M; J Mater Sci in press 1999
- (3) Aizawa, M; Phosphorus Res Bull 1996, V6, P217 HCAPLUS
- (4) Bigi, A; Acta Cryst 1996, VB52, P87 HCAPLUS
- (5) Messing, G; J Am Ceram Soc 1993, V76, P2707 HCAPLUS
- (6) Saito, T; Inorg Mater 1998, V5, P377 HCAPLUS

IT 303954-99-6P, Calcium magnesium
hydroxide phosphate (Ca_{9.75}Mg_{0.25}(OH)₂(
PO4)6) 303955-00-2P, Calcium magnesium
hydroxide phosphate (Ca_{9.5}Mg_{0.5}(OH)₂(
PO4)6) 303955-01-3P, Calcium magnesium
hydroxide phosphate (Ca_{9.25}Mg_{0.75}(OH)₂(
PO4)6) 303955-02-4P, Calcium magnesium
hydroxide phosphate (Ca₉Mg(OH)₂(PO4
)6) 303955-03-5P, Calcium magnesium
hydroxide phosphate (Ca_{8.5}Mg_{1.5}(OH)₂(
PO4)6) 303955-04-6P, Calcium magnesium
hydroxide phosphate (Ca₄Mg(OH)(PO4
)3) 303955-05-7P, Calcium magnesium
hydroxide phosphate (Ca₅Mg₅(OH)₂(PO4
)6)

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(characterization of **magnesium**-substituted
hydroxyapatite prepd. by ultrasonic spray-pyrolysis technique)

RN 303954-99-6 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca_{9.75}Mg_{0.25}(OH)₂(PO4)6) (9CI) (CA
INDEX NAME)

Component	Ratio	Component
		Registry Number
HO	2	14280-30-9

O4P		6		14265-44-2
Ca		9.75		7440-70-2
Mg		0.25		7439-95-4

RN 303955-00-2 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca_{9.5}Mg_{0.5}(OH)₂(PO₄)₆) (9CI) (CA INDEX NAME)

Component		Ratio		Component Registry Number
HO		2		14280-30-9
O4P		6		14265-44-2
Ca		9.5		7440-70-2
Mg		0.5		7439-95-4

RN 303955-01-3 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca_{9.25}Mg_{0.75}(OH)₂(PO₄)₆) (9CI) (CA INDEX NAME)

Component		Ratio		Component Registry Number
HO		2		14280-30-9
O4P		6		14265-44-2
Ca		9.25		7440-70-2
Mg		0.75		7439-95-4

RN 303955-02-4 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca₉Mg(OH)₂(PO₄)₆) (9CI) (CA INDEX NAME)

Component		Ratio		Component Registry Number
HO		2		14280-30-9
O4P		6		14265-44-2
Ca		9		7440-70-2
Mg		1		7439-95-4

RN 303955-03-5 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca_{8.5}Mg_{1.5}(OH)₂(PO₄)₆) (9CI) (CA INDEX NAME)

Component		Ratio		Component Registry Number
HO		2		14280-30-9
O4P		6		14265-44-2
Ca		8.5		7440-70-2
Mg		1.5		7439-95-4

RN 303955-04-6 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca₄Mg(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component		Ratio		Component Registry Number
HO		1		14280-30-9
O4P		3		14265-44-2
Ca		4		7440-70-2
Mg		1		7439-95-4

RN 303955-05-7 HCAPLUS
 CN Calcium magnesium hydroxide phosphate (Ca₅Mg₅(OH)₂(PO₄)₆) (9CI) (CA INDEX NAME)

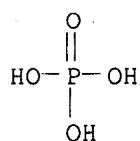
Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	5	7440-70-2
Mg	5	7439-95-4

IT 12167-74-7P, **Calcium hydroxide phosphate** (Ca₁₀(OH)₂(PO₄)₆)
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (hydroxyapatite phase; characterization of **magnesium**-substituted **hydroxyapatite** prep. by ultrasonic spray-pyrolysis technique)

RN 12167-74-7 HCAPLUS
 CN Calcium hydroxide phosphate (Ca₅(OH)(PO₄)₃) (7CI, 8CI, 9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7758-87-4, **.beta.-Tricalcium phosphate**
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative) (.beta.-phase; characterization of **magnesium**-substituted **hydroxyapatite** prep. by ultrasonic spray-pyrolysis technique)
 RN 7758-87-4 HCAPLUS
 CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Ca

L108 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:685665 HCAPLUS
 DN 132:43983
 TI Preparation of spherical **apatite** particles by the homogeneous precipitation method in the presence of **magnesium** ions and their ion-exchange properties
 AU Aizawa, M.; Terado, T.; Howell, F. S.; Itatani, K.
 CS Chiyoda-ku, 7-1 Kioi-cho, Faculty of Science and Engineering, Department of Chemistry, Sophia University, Tokyo, Japan
 SO Materials Research Bulletin (1999), 34(8), 1215-1225
 CODEN: MRBUAC; ISSN: 0025-5408
 PB Elsevier Science Inc.
 DT Journal

- LA English
 CC 78-4 (Inorganic Chemicals and Reactions)
 AB Spherical **apatite** particles were prepd. by the homogeneous pptn. method in the presence of **Mg** ions. The starting solns. were prepd. by mixing 0.167 mol L-1 of **Ca(NO3)2**, 0.100 mol L-1 of **(NH4)2HPO4**, 1.00 mol L-1 of **(NH2)2CO**, 0.10 mol L-1 of **HNO3**, and a small amt. of **Mg(NO3)2**. The **carbonate** -contg. **apatite** powders were obtained by heating these solns. at 80-95.degree. for 48-192 h. Although fibrous particles with long-axis lengths of 30 to 60 .mu.m were obtained from the **Mg**-free soln., spherical agglomerates with diams. of .apprx.10 .mu.m, which contained minute plate-like particles, were present in the **apatite** powders derived from the solns. with 5% of **Mg** ions. The ion-exchange test for the harmful ions (**Pb2+**, **Cd2+**, and **Ni2+**) showed that the ion-exchange abilities of the **apatite** powders contg. **Mg** ions were much better than the ability of the **Mg**-free **apatite** powder. The ion-exchanged amts. of the **apatite** powder contg. **Mg** ions were arranged in the following order: **Pb2+** >> **Cd2+** > **Ni2+**.
- ST **calcium carbonate hydroxide phosphate**.
apatite prepn cation exchange; lead cation exchange
calcium carbonate hydroxide phosphate
apatite; nickel cation exchange **calcium**
carbonate hydroxide phosphate apatite; cadmium
 cation exchange **calcium carbonate hydroxide**
phosphate apatite
- IT Cation exchange
 (of **calcium carbonate hydroxide phosphate**
 spherical **apatite** particles with divalent metal ions)
- IT 7439-92-1, Lead, processes 7440-02-0, Nickel, processes 7440-43-9,
 Cadmium, processes
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (cation exchange with spherical **calcium carbonate**
hydroxide phosphate apatite particles)
- IT 12207-55-5, Lead hydroxide **phosphate** (**Pb5(OH)(**
PO4)3)
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (formation from **calcium carbonate hydroxide**
phosphate cation exchange with lead ions)
- IT 12167-74-7P, **Calcium hydroxide phosphate** (**Ca5(OH)(PO4)3**)
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. in presence of **magnesium** ions)
- IT 52110-76-6P, **Calcium carbonate hydroxide**
phosphate
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic
 preparation); PREP (Preparation); PROC (Process)
 (prepn. spherical **apatite** particles in presence of
magnesium ions and cation exchange properties)
- IT 57-13-6, Urea, reactions 7697-37-2, Nitric acid, reactions
 7783-28-0 10124-37-5, **Calcium nitrate**
(Ca(NO3)2) 10377-60-3
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for prepn. of **calcium carbonate hydroxide**
phosphate)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Aizawa, M; Inorg Mater 1998, V5, P387 HCAPLUS
- (2) Fowler, B; Arch Oral Biol 1966, V11, P477 HCAPLUS
- (3) Hench, L; J Am Ceram Soc 1991, V74, P1487 HCAPLUS
- (4) Kawasaki, T; J Chromatogr 1991, V544, P147 HCAPLUS
- (5) Kinoshita, M; Gypsum Lime 1990, V227, P19
- (6) Monma, H; Gypsum Lime 1987, V210, P287 HCAPLUS

- (7) Monma, H; J Catal 1982, V75, P200 HCAPLUS
 (8) Suzuki, T; Gypsum Lime 1986, V204, P58
 (9) Suzuki, T; J Chem Soc Faraday Trans 1 1981, V77, P1059 HCAPLUS
 (10) Suzuki, T; J Chem Soc Faraday Trans 1 1982, V78, P3605 HCAPLUS
 (11) Suzuki, T; J Chem Soc Faraday Trans 1 1984, V80, P3157 HCAPLUS
 (12) Wilson, J; An Introduction to Bioceramics 1993, V1, P139
 (13) Yamashita, K; Inorg Mater 1995, V2, P166 HCAPLUS

IT 12167-74-7P, Calcium hydroxide phosphate (
 Ca5(OH)(PO4)3)

RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. in presence of magnesium ions)

RN 12167-74-7 HCAPLUS

CN Calcium hydroxide phosphate (Ca5(OH)(PO4)3) (7CI, 8CI, 9CI) (CA INDEX NAME)

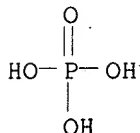
Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

IT 7783-28-0 10124-37-5, Calcium nitrate
 (Ca(NO3)2) 10377-60-3

RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for prepn. of calcium carbonate hydroxide
 phosphate)

RN 7783-28-0 HCAPLUS

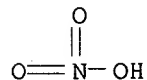
CN Phosphoric acid, diammonium salt (8CI, 9CI) (CA INDEX NAME)



2 NH3

RN 10124-37-5 HCAPLUS

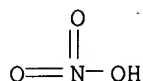
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 10377-60-3 HCAPLUS

CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

- L108 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1999:18482 HCAPLUS
 DN 130:147770
 TI Synthesis of **magnesium**-containing **hydroxyapatite** and
 fluoroapatite by oxidative decomposition of a **calcium** chelate
 AU Saito, Tomoki; Hashimoto, Kazuaki; Toda, Yoshitomo; Udagawa, Shigekazu;
 Kanazawa, Takafumi
 CS Cent. Res. Dev. Cent., Sangi Co. Ltd., Saitama, 344-0001, Japan
 SO Muki Materiaru (1998), 5(276), 377-386
 CODEN: MUMAFX; ISSN: 1340-7899
 PB Sekko Sekkai Gakkai
 DT Journal
 LA Japanese
 CC 78-4 (Inorganic Chemicals and Reactions)
 AB The effects of Mg²⁺ on morphol. and chem. compn. of **hydroxyapatite**
 (HAp) were investigated by the use of oxidative decompn. of
calcium chelate (Ca-EDTA). A reaction system with no
 Mg²⁺ gave a Ca-deficient CO₃-contg. **apatite**
 ppt. (Ca/P molar ratio = 1.46) which had a Japanese bladder
 cherry-like form (a polyhedron crystal based on a hexagon). As Mg²⁺ was
 added to the system the crystallinity decreased and a spherical ppt.
 formed. At Mg/(Ca+Mg) > 0.25 Mg
 -contg. whitlockite was produced. A Mg²⁺ adsorption 8% on the crystal
 surface was obsd. and the substitution limit of Mg²⁺ in the HAp structure
 was 10 mol%. Reaction systems are also given where some of the HAp is
 replaced with fluoroapatite.
 ST **hydroxyapatite** prepn **calcium** chelate decompn;
 fluoroapatite prepn **calcium** chelate decompn; whitlockite prepn
calcium chelate decompn
 IT Crystal structure types
 (apatite; synthesis of **magnesium**-contg.
apatites by oxidative decompn. of a **calcium** chelate)
 IT 119029-00-4P, **Calcium magnesium hydroxide**
phosphate 220076-89-1P, **Calcium magnesium**
fluoride phosphate
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (synthesis of **magnesium**-contg. **apatites** by
 oxidative decompn. of a **calcium** EDTA chelate)
 IT 64-02-8, Tetrasodium edta 7558-79-4, Disodium **phosphate**
 7681-49-4, Sodium fluoride, reactions 10124-37-5,
Calcium nitrate 10377-60-3, **Magnesium**
nitrate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of **magnesium**-contg. **apatites** by
 oxidative decompn. of a **calcium** chelate)
 IT 62-33-9P, **Monocalcium** disodium edta
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (synthesis of **magnesium**-contg. **apatites** by
 oxidative decompn. of a **calcium** chelate)
 IT 25618-23-9P, **Calcium magnesium phosphate**
 RL: SPN (Synthetic preparation); PREP (Preparation)

(synthesis of **magnesium-contg. apatites** by
oxidative decompn. of a **calcium** chelate)

IT 119029-00-4P, **Calcium magnesium hydroxide
phosphate**

RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of **magnesium-contg. apatites** by
oxidative decompn. of a **calcium** EDTA chelate)

RN 119029-00-4 HCAPLUS

CN Calcium magnesium hydroxide phosphate (9CI) (CA INDEX NAME)

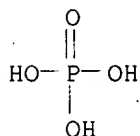
Component	Ratio	Component Registry Number
HO	x	14280-30-9
O4P	x	14265-44-2
Ca	x	7440-70-2
Mg	x	7439-95-4

IT 7558-79-4, Disodium **phosphate** 10124-37-5,
Calcium nitrate 10377-60-3, **Magnesium
nitrate**

RL: RCT (Reactant); RACT. (Reactant or reagent)
(synthesis of **magnesium-contg. apatites** by
oxidative decompn. of a **calcium** chelate)

RN 7558-79-4 HCAPLUS

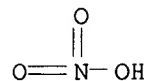
CN Phosphoric acid, disodium salt (8CI, 9CI) (CA INDEX NAME)



2 Na

RN 10124-37-5 HCAPLUS

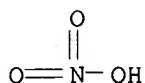
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

RN 10377-60-3 HCAPLUS

CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

L108 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1998:599930 HCAPLUS

DN 129:249236

TI Hydraulically hardened materials and their preparation

IN Owada, Hitoshi; Okada, Yoshihiko

PA Onoda Cement Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C04B028-34

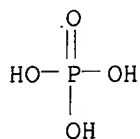
ICS C01B025-32; C01B033-20

CC 58-1 (Cement, Concrete, and Related Building Materials)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10245257	A2	19980914	JP 1997-62217	19970228
AB	The hardened materials mainly contain Ca phosphate and .gtoreq.1 compds. selected from Si oxide and silicic acid (salts), whereas Ca phosphate grains are surrounded by the Si compds. Compds. and/or solid solns. mainly contg. Ca and phosphoric acid are successively or simultaneously mixed and kneaded with acids and solns. mainly contg. colloidal Si oxide and/or silicic acid (salts), and allowed to harden to give the claimed hardened materials. The hardened materials show high resistance to hard water and stable hardness.				
ST	calcium phosphate hydraulic compn silicon compd; silica hydraulic compn calcium phosphate ; silicic acid hydraulic compn calcium phosphate				
IT	Aerosols (in prepn. of hydraulically hardened materials mainly contg. Ca phosphate and Si compds.)				
IT	Cement (construction material) (prepn. of hydraulically hardened materials mainly contg. Ca phosphate and Si compds.)				
IT	79-10-7, Acrylic acid, uses 7697-37-2, Nitric acid, uses RL: NUU (Other use, unclassified); USES (Uses) (in prepn. of hydraulically hardened materials mainly contg. Ca phosphate and Si compds.)				
IT	1343-98-2, Silicic acid 1344-09-8, Sodium silicate 7757-93-9, Dicalcium phosphate RL: PEP (Physical, engineering or chemical process); PROC (Process) (in prepn. of hydraulically hardened materials mainly contg. Ca phosphate and Si compds.)				
IT	1306-06-5, Hydroxyapatite 1306-06-5D, Hydroxyapatite , solid solns. 7631-86-9, Colloidal silica, processes 7758-87-4, Tricalcium phosphate 7758-87-4D, Tricalcium phosphate , solid solns. 33636-14-5 137524-23-3 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses) (in prepn. of hydraulically hardened materials mainly contg. Ca phosphate and Si compds.)				

IT 7757-93-9, Dicalcium phosphate
 RL: PEP (Physical, engineering or chemical process); PROC (Process)
 (in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)
 RN 7757-93-9 HCAPLUS
 CN Phosphoric acid, calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



Ca

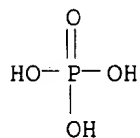
IT 1306-06-5, Hydroxyapatite 1306-06-5D,
 Hydroxyapatite, solid solns. 7758-87-4,
 Tricalcium phosphate 7758-87-4D,
 Tricalcium phosphate, solid solns. 137524-23-3
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or
 engineered material use); PROC (Process); USES (Uses)
 (in prepn. of hydraulically hardened materials mainly contg. **Ca phosphate** and Si compds.)
 RN 1306-06-5 HCAPLUS
 CN Hydroxylapatite (Ca₅(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 1306-06-5 HCAPLUS
 CN Hydroxylapatite (Ca₅(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

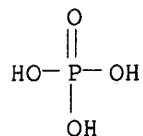
RN 7758-87-4 HCAPLUS
 CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Ca

RN 7758-87-4 HCAPLUS

CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Ca

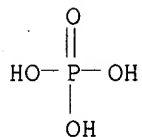
RN 137524-23-3 HCAPLUS

CN Phosphoric acid, magnesium salt, mixt. with hydroxylapatite
(Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

CM 1

CRN 10043-83-1

CMF H3 O4 P . x Mg



x Mg

CM 2

CRN 1306-06-5

CMF Ca . H O . O4 P

CCI MNS, TIS

CDES 8:IN,MN, HYDROXYLAPATITE

CM 3

CRN 14280-30-9

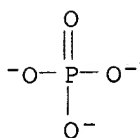
CMF H O

OH-

CM 4

CRN 14265-44-2

CMF O4 P



CM 5

CRN 7440-70-2

CMF Ca

Ca

L108 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1997:518709 HCAPLUS

DN 127:195382

TI Effects of **magnesium** on the formation of **calcium**
-deficient **hydroxyapatite** from $\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$ and $\text{Ca}_4(\text{PO}_4)_2\text{O}$

AU TenHuisen, Kevor S.; Brown, Paul W.

CS Mater. Res. Lab., Pennsylvania State Univ., University Park, PA, 16802, USA

SO Journal of Biomedical Materials Research (1997), 36(3), 306-314
CODEN: JBMRBG; ISSN: 0021-9304

PB Wiley

DT Journal

LA English

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 78

AB **Calcium**-deficient **hydroxyapatite** (HA) with a Ca/P molar ratio of 1.50 was synthesized in various concns. (0.01-75 mM) of MgCl_2 at 37.4.degree.C by reaction between particulate $\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$ and $\text{Ca}_4(\text{PO}_4)_2\text{O}$. The effects of **magnesium** on the kinetics of HA formation were detd. using isothermal calorimetry. All reactions completely consumed the precursor phases as indicated by X-ray diffraction anal. and a const. enthalpy of reaction (240 kJ/mol). **Magnesium** concns. below 1 mM had no effect on the kinetics of HA formation. **Magnesium** concns. between 1 and 2.5 mM affected the reaction path but did not affect the time required for complete reaction. Higher concns. extended the times of complete reaction due to **magnesium** adsorption on the precursor phase(s) and HA nuclei, and stabilization of a noncryst. **calcium phosphate** (NCP). HA formation in the presence of **magnesium** resulted in sepn. of the following two events: initial formation of HA nuclei and NCP, and consumption of $\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$. This was indicated by the appearance of an addnl. calorimetric peak. Variations in **calcium**, **magnesium**, and **phosphate** concns. and pH with time were detd. Increasing the **magnesium** concn. resulted in elevated **calcium** concns. After an initial decrease in **magnesium** owing to its adsorption onto HA nuclei and precursor(s), a period of slow reaction at const. **magnesium** concn. was obsd. Both the **magnesium** concn. in soln. and the proportions of precursors present decreased prior to any evidence of a cryst. product phase. This is attributed to the formation of NCP capable of incorporating **magnesium**. This noncryst. phase persisted for more than 1 yr for reactions in **magnesium** concns. about 2.5 mM. Its conversion to HA resulted in the release of

magnesium to the soln.
 ST **magnesium hydroxyapatite calcium phosphate cement**
 IT **1306-06-5P, Hydroxyapatite**
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
 (effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
 IT **1306-01-0, TetraCalcium phosphate 7786-30-3, Magnesium chloride, reactions 7789-77-7, DiCalcium phosphate dihydrate**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
 IT **1306-06-5P, Hydroxyapatite**
 RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
 (effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
 RN 1306-06-5 HCAPLUS
 CN Hydroxylapatite (Ca₅(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

IT **7786-30-3, Magnesium chloride, reactions**
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (effects of **magnesium** on formation of **calcium** -deficient **hydroxyapatite**)
 RN 7786-30-3 HCAPLUS
 CN Magnesium chloride (MgCl₂) (9CI) (CA INDEX NAME)

Cl-Mg-Cl

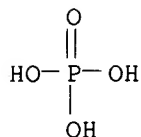
L108 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1997:352867 HCAPLUS
 DN 127:79068
 TI The effects of **magnesium** on **hydroxyapatite** formation in vitro from CaHPO₄ and Ca₄(PO₄)₂O at 37.4.degree.C
 AU Martin, R. I.; Brown, P. W.
 CS Materials Research Laboratory, Penn State University, University Park, PA, 16802, USA
 SO Calcified Tissue International (1997), 60(6), 538-546
 CODEN: CTINDZ; ISSN: 0171-967X
 PB Springer
 DT Journal
 LA English
 CC 13-2 (Mammalian Biochemistry)
 Section cross-reference(s): 67
 AB The effects of **magnesium** ion on the formation of **calcium** -deficient **hydroxyapatite** [Ca₉HPO₄(PO₄)₅OH, CDHAp] from CaHPO₄ and Ca₄(PO₄)₂O dissoln. were investigated using two **magnesium** sources: Mg₃(PO₄)₂ (chem. system 1) or MgCl₂.cntdot.H₂O (chem. system 2) solns. Because chloroapatite does not

form from aq. solns., the use of two **magnesium** sources facilitated the detn. of **magnesium**'s role during synthetic **hydroxyapatite** formation in vitro and possible related effects during biomineralization. Isothermal calorimetry detd. the progress of reactions. Two peaks are obsd. as heat is evolved during the formation of CDHAp in water at 37.4.degree.C. The nucleation and growth of CDHAp are the corresponding mechanisms. Although the time for complete reaction and total heat-of-reaction .DELTA.Hr remain const., the height of the first peak is reduced as the concn. of **magnesium** ion approaches 4 mM in either chem. system. **Magnesium** does not substitute into CDHAp even though there are **calcium** vacancies available. Subsequent increases cause the remaining heat peak to broaden and the time required for complete reaction to approach 24 h as the initial MgCl2 concn. reaches 100 mM. Supersatn. limits chem. system 1 to Mg3(PO4)2 concns. below 10 mM. A MgCl2 concn. of 3.16 M precludes CDHAp from forming for over 3 mo; rather newberyite, MgHPO4 .cntdot. 3H2O, ppts. The morphol. and surface are of the CDHAp formed in 100 mM MgCl2 soln. are comparable to those of CDHAp formed in water. The surface areas are approx. 80 m2/g. **Magnesium** concns. below 4 mM only inhibit nucleation whereas those above 4 mM inhibit growth as well. **Magnesium phosphate** complexes are more inhibitory than **magnesium** chloride complexes. Increasing the liq.-to-solids ratio or agitation significantly increases the induction period before reaction initiates. Increasing the liq.-to-solids ratio increases the time span for growth whereas increasing agitation decreases the time span for growth. The large inhibitory effect of agitation suggests quiescent systems are more suitable for detg. the kinetics of HAp formation. A **magnesium** inorg. chem. activity (.alpha.Mg = .gamma.Mg[Mg2+]) many times greater than that in biol. fluids is required before inhibition of **hydroxyapatite** formation is realized.

ST **magnesium hydroxyapatite** formation nucleation growth
biomineralization
IT Calcification
Crystal growth
Crystal nucleation
(effects of **magnesium** on **hydroxyapatite** formation
in vitro from CaHPO4 and Ca4(PO4)2O at 37.4.degree.C)
IT 1306-01-0, **Calcium oxide phosphate** (Ca4O(PO4)
)2) 7439-95-4, **Magnesium**, reactions 7757-87-1
7757-93-9 7786-30-3, **Magnesium chloride**
(MgCl2), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(effects of **magnesium** on **hydroxyapatite** formation
in vitro from CaHPO4 and Ca4(PO4)2O at 37.4.degree.C)
IT 1306-06-5P, **Hydroxyapatite**
RL: SPN (Synthetic preparation); PREP (Preparation)
(effects of **magnesium** on **hydroxyapatite** formation
in vitro from CaHPO4 and Ca4(PO4)2O at 37.4.degree.C)
IT 7439-95-4, **Magnesium**, reactions 7757-87-1
7757-93-9 7786-30-3, **Magnesium chloride**
(MgCl2), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(effects of **magnesium** on **hydroxyapatite** formation
in vitro from CaHPO4 and Ca4(PO4)2O at 37.4.degree.C)
RN 7439-95-4 HCAPLUS
CN **Magnesium** (8CI, 9CI) (CA INDEX NAME)

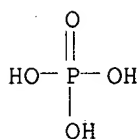
Mg

RN 7757-87-1 HCAPLUS
CN Phosphoric acid, magnesium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Mg

RN 7757-93-9 HCAPLUS
 CN Phosphoric acid, calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME),



Ca


RN 7786-30-3 HCAPLUS
 CN Magnesium chloride (MgCl₂) (9CI) (CA INDEX NAME)

Cl-Mg-Cl

IT **1306-06-5P, Hydroxyapatite**
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (effects of **magnesium** on **hydroxyapatite** formation
 in vitro from CaHPO₄ and Ca₄(PO₄)₂O at 37.4.degree.C)
 RN 1306-06-5 HCAPLUS
 CN Hydroxylapatite (Ca₅(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

L108 ANSWER 10 OF 17 HCAPLUS . COPYRIGHT 2002 ACS
 AN 1997:244356 HCAPLUS
 DN 126:229437
 TI Remineralizing products and methods for teeth
 IN Winston, Anthony E.; Usen, Norman
 PA Enamelon, Inc., USA
 SO PCT Int. Appl., 94 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM A61K007-16
 ICS A61K007-18; A61K009-68; A61K033-24; B65D035-22
 CC 62-7 (Essential Oils and Cosmetics)



FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9706774	A1	19970227	WO 1996-US12456	19960802
	W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA				
	US 5603922	A	19970218	US 1995-512473	19950808
	US 5645853	A	19970708	US 1995-512286	19950808
	AU 9666829	A1	19970312	AU 1996-66829	19960802
	AU 712524	B2	19991111		
	EP 845976	A1	19980610	EP 1996-926802	19960802
	R: BE, DE, ES, FR, GB, IT, SE				
	JP 10511104	T2	19981027	JP 1996-509305	19960802
	BR 9610258	A	20000509	BR 1996-10258	19960802
PRAI	US 1995-512286	A	19950808		
	US 1995-512473	A	19950808		
	WO 1996-US12456	W	19960802		
AB	Products and methods are provided for the remineralization of lesions formed in the subsurfaces of teeth and/or mineralization of tubules in exposed dentin of teeth, wherein the products generally contain .gtoreq.1 water-sol. Ca salt, .gtoreq.1 divalent metal salt other than Ca salt, .gtoreq.1 water-sol. phosphate salt, and, optionally, .gtoreq.1 water-sol. fluoride salt. The water-sol. salts are mixed to form an aq. mixed soln. having pH .apprx.4.5-7.0. Cations released by the divalent metal salt stabilize the aq. soln. such that PO43- and Ca2+ released by the salts do not react to any large extent until the product is introduced into the oral cavity and, upon introduction into the oral cavity, the ions do not rapidly ppt. This gives the cations and anions sufficient time to diffuse through the tooth surface to the lesion(s) and/or tubules where the ions form a ppt., thereby remineralizing the lesion(s) and/or mineralizing the tubule(s). Thus, a 2-part remineralizing mouthwash contained (A) H2O 73.8, glycerin 20.0, Ca(NO3)2.4H2O 4.5, MgCl2.6H2O, flavoring 0.4, and saccharin 0.1 wt.% and (B) H2O 75.9, glycerin 20.0, K2HPO4 0.5, KH2PO4 3.0, NaF 0.1, flavoring 0.4, and saccharin 0.1 wt.%; the parts were combined just before use.				
ST	tooth remineralization calcium phosphate fluoride; mineralization tooth mouthwash dentifrice				
IT	Tooth				
	(dentin; remineralizing products and methods for teeth)				
IT	Drug delivery systems				
	(dragees; remineralizing products and methods for teeth)				
IT	Dentifrices				
	(gels; remineralizing products and methods for teeth)				
IT	Drug delivery systems				
	(lozenges; remineralizing products and methods for teeth)				
IT	Salts, biological studies				
	RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)				
	(of divalent metals; remineralizing products and methods for teeth)				
IT	Candy				
	Chewing gum				
	Dentifrices				
	Food				
	Mouthwashes				
	Tooth				
	(remineralizing products and methods for teeth)				

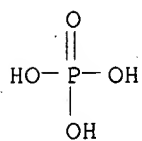
- IT Fluorides, biological studies
Phosphates, biological studies
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (remineralizing products and methods for teeth)
- IT Drug delivery systems
 (solns.; remineralizing products and methods for teeth)
- IT Drug delivery systems
 (tablets; remineralizing products and methods for teeth)
- IT 62-54-4, **Calcium** acetate 142-72-3, **Magnesium** acetate
 299-28-5, **Calcium** gluconate 543-94-2, Strontium acetate
 557-34-6, Zinc acetate 814-80-2, **Calcium** lactate
 1309-48-4, **Magnesium** oxide, biological studies,
 7439-95-4D, **Magnesium**, salts, biological studies
 7440-24-6D, Strontium, salts, biological studies 7440-31-5D, Tin, salts,
 biological studies 7440-66-6D, Zinc, salts, biological studies
 7440-70-2D, **Calcium**, salts, biological studies 7558-79-4
 , Disodium **phosphate** 7558-80-7, Monosodium
phosphate 7631-97-2 7646-85-7, Zinc chloride, biological
 studies 7681-49-4, Sodium fluoride, biological studies 7733-02-0, Zinc
 sulfate 7758-11-4, Dipotassium **phosphate** 7772-99-8, Stannous
 chloride, biological studies 7778-77-0, Monopotassium **phosphate**
 7779-88-6, Zinc **nitrate** 7786-30-3, **Magnesium**
 chloride, biological studies 10042-76-9, Strontium **nitrate**
 10043-52-4, **Calcium** chloride, biological studies
 10124-37-5, **Calcium** **nitrate** 10476-85-4,
 Strontium chloride
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (remineralizing products and methods for teeth)
- IT 1306-06-5P, **Hydroxylapatite**
 RL: PNU (Preparation, unclassified); PREP (Preparation)
 (remineralizing products and methods for teeth)
- IT 1309-48-4, **Magnesium** oxide, biological studies
 7439-95-4D, **Magnesium**, salts, biological studies
 7558-79-4, Disodium **phosphate** 7558-80-7,
 Monosodium **phosphate** 7786-30-3, **Magnesium**
 chloride, biological studies 10043-52-4, **Calcium**
 chloride, biological studies 10124-37-5, **Calcium**
nitrate
 RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (remineralizing products and methods for teeth)
- RN 1309-48-4 HCAPLUS
- CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

Mg=O

RN 7439-95-4 HCAPLUS
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)

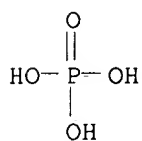
Mg

RN 7558-79-4 HCAPLUS
 CN Phosphoric acid, disodium salt (8CI, 9CI) (CA INDEX NAME)



2 Na

RN 7558-80-7 HCAPLUS
 CN Phosphoric acid, monosodium salt (8CI, 9CI) (CA INDEX NAME)



Na

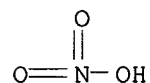
RN 7786-30-3 HCAPLUS
 CN Magnesium chloride (MgCl₂) (9CI) (CA INDEX NAME)

Cl-Mg-Cl

RN 10043-52-4 HCAPLUS
 CN Calcium chloride (CaCl₂) (9CI) (CA INDEX NAME)

Cl-Ca-Cl

RN 10124-37-5 HCAPLUS
 CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

IT 1306-06-5P, **Hydroxylapatite**
 RL: PNU (Preparation, unclassified); PREP (Preparation)
 (remineralizing products and methods for teeth)
 RN 1306-06-5 HCAPLUS
 CN Hydroxylapatite (Ca₅(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component
		Registry Number
=====	+	=====

HO		1		14280-30-9
O4P		3		14265-44-2
Ca		5		7440-70-2

L108 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1996:514017 HCAPLUS

DN 125:204451

TI Preparation and characterization of **magnesium-calcium hydroxyapatites**

AU Yasukawa, Akemi; Ouchi, Satoshi; Kandori, Kazuhiko; Ishikawa, Tatsuo

CS Sch. Chem., Osaka Univ. Educ., Kashiwara, 582, Japan

SO Journal of Materials Chemistry (1996), 6(8), 1401-1405

CODEN: JMACEP; ISSN: 0959-9428

PB Royal Society of Chemistry

DT Journal

LA English

CC 63-7 (Pharmaceuticals)

Section cross-reference(s): 13

AB **Magnesium-calcium hydroxyapatite** (MgCaHAP)

solid solns. have been prepd. by a wet method from aq. solns. with different molar ratios, $\text{Mg}/(\text{Mg} + \text{Ca})$, ranging from 0 to 0.5. The MgCaHAP particles formed were characterized by XRD, FTIR, TEM, ICP, TG-DTA and gas adsorption techniques. The $\text{Mg}/(\text{Mg} + \text{Ca})$ ratios of the formed MgCaHAP particles were less than those of the tarting solns. With increasing Mg content, the particles became less cryst. and agglomerates of the fine crystals and finally the products were amorphous at $\text{Mg}/(\text{Mg} + \text{Ca}) > 0.31$. The amt. of irreversible adsorption of CO_2 and CH_3OH showed a min. at a molar ratio $(\text{Mg} + \text{Ca})/\text{P}$ of ca. 1.56, less than the stoichiometric ratio of 1.67.

ST **magnesium calcium hydroxyapatite** prepn

IT Adsorption

(prepn. and characterization of **magnesium-calcium hydroxyapatites**)

IT 67-56-1, Methanol, properties 124-38-9, Carbon dioxide, properties

RL: PRP (Properties)

(adsorption of; prepn. and characterization of **magnesium-calcium hydroxyapatites**)

IT 127836-54-8P, Calcium magnesium

hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3)

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. and characterization of **magnesium-calcium hydroxyapatites**)

IT 1305-62-0, Calcium hydroxide, reactions

7664-38-2, Phosphoric acid, reactions 10377-60-3,

Magnesium nitrate

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepn. and characterization of **magnesium-calcium hydroxyapatites**)

IT 127836-54-8P, Calcium magnesium

hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3)

RL: PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use);

BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. and characterization of **magnesium-calcium hydroxyapatites**)

RN 127836-54-8 HCAPLUS

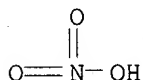
CN Calcium magnesium hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

IT 1305-62-0, Calcium hydroxide, reactions
 10377-60-3, Magnesium nitrate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prepn. and characterization of **magnesium-calcium hydroxyapatites**)
 RN 1305-62-0 HCAPLUS
 CN Calcium hydroxide (Ca(OH)₂) (9CI) (CA INDEX NAME)

HO-Ca-OH

RN 10377-60-3 HCAPLUS
 CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Mg

L108 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2002 ACS
 AN 1996:145667 HCAPLUS
 DN 124:216642
 TI Rietveld structure refinements of **calcium hydroxylapatite** containing **magnesium**
 AU Bigi, A.; Falini, G.; Foresti, E.; Gazzano, M.; Ripamonti, A.; Roveri, N.
 CS Dip. Chim. 'G. Ciamician' Cent. Studio Fis. Macromolecole, Univ. Studi Bologna, Bologna, I-40126, Italy
 SO Acta Crystallographica, Section B: Structural Science (1996), B52(1), 87-92
 CODEN: ASBSDK; ISSN: 0108-7681
 PB Munksgaard
 DT Journal
 LA English
 CC 75-8 (Crystallography and Liquid Crystals)
 AB The crystal structures of four **hydroxylapatite** (HA) samples prepd. from solns. in the presence of 10, 15, 25 and 30 **Mg** -atom-% were studied by x-ray powder pattern fitting. The total **Mg** content of the solid samples, as detd. by chem. anal., was 4.9, 14.1, 20.4 and 30.6 **Mg**-atom-%, resp. Rietveld anal. was performed using the computer program PREFIN implemented with routines which allow the refinements of the av. crystallite sizes. Different refinement procedures were carried out to evaluate the effect of the amorphous and background profiles on the occupancy factor data. For comparison, **Mg**-free **hydroxylapatite** was refined with the same strategies. The results of the different approaches indicate that the degree of **Mg** substitution for **Ca** in the Ha structure can be at most .apprx.10 atom-%. **Mg** substitutes **Ca** preferentially at the 6(h) site. The broadening of the

diffraction peaks increases on increasing the total **Mg** content in the solid phase, which is always significantly higher than the amt. incorporated into the HA structure. The excess is probably located in the amorphous phase and/or on the crystallite surface.

ST structure **calcium magnesium hydroxylapatite**
crystal
IT Crystal structure
(of **magnesium-substituted calcium hydroxylapatite**)
IT 127836-54-8, **Calcium magnesium hydroxide phosphate** ((Ca,Mg)5(OH)(PO4)3)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(Rietveld refinements of crystal structure of)
IT 127836-54-8, **Calcium magnesium hydroxide phosphate** ((Ca,Mg)5(OH)(PO4)3)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(Rietveld refinements of crystal structure of)
RN 127836-54-8 HCAPLUS
CN Calcium magnesium hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

L108 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1991:663521 HCAPLUS

DN 115:263521

TI Manufacture of ceramics coated with **calcium phosphate** as artificial bones

IN Tsuzuki, Masaji; Miyata, Eiji; Hattori, Masaaki; Miura, Kazunori; Kondo, Kazuo

PA NGK Spark Plug Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C04B041-87

ICS A61L027-00

ICA C04B035-00

CC 63-7 (Pharmaceuticals)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 03137079	A2	19910611	JP 1989-272191	19891019
	JP 07074109	B4	19950809		

AB A ceramic coated with **Ca phosphate** is prepd. for use in manufg. biocompatible artificial bone. A sintered ceramic is coated with a mixt. of **hydroxylapatite** and **Ca3(PO4)2** (the wt. ratio from 4/1 to 1/5), or coated with a mixt. of **hydroxylapatite** and **Mg phosphate** (the wt. ratio 50/1 to 50/5).

ST ceramic **calcium phosphate** artificial bone

IT Bone

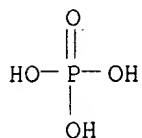
(artificial, manuf. of, with ceramic materials coated with

hydroxylapatite and tricalcium phosphate)
 IT Dental materials and appliances
 Prosthetic materials and Prosthetics
 (implants, manuf. of, with ceramic materials coated with
 hydroxylapatite and tricalcium phosphate)
 IT 124097-42-3 137524-23-3
 RL: BIOL (Biological study)
 (ceramic coating with, in artificial bone manuf.)
 IT 137524-23-3
 RL: BIOL (Biological study)
 (ceramic coating with, in artificial bone manuf.)
 RN 137524-23-3 HCAPLUS
 CN Phosphoric acid, magnesium salt, mixt. with hydroxylapatite
 (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

CM 1

CRN 10043-83-1

CMF H3 O4 P . x Mg



x Mg

CM 2

CRN 1306-06-5

CMF Ca . H O . O4 P

CCI MNS, TIS

CDES 8:IN,MN, HYDROXYLAPATITE

CM 3

CRN 14280-30-9

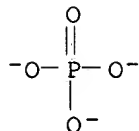
CMF H O

OH⁻

CM 4

CRN 14265-44-2

CMF O4 P



CM 5

CRN 7440-70-2

CMF Ca

Ca

L108 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1991:418782 HCAPLUS

DN 115:18782

TI **Magnesium**-uptake into **apatite** crystal

AU Okazaki, Masayuki; LeGeros, Racquel Z.

CS Fac. Dent., Osaka Univ., Osaka, 565, Japan

SO Maguneshumu (Kyoto) (1990), 9(1), 19-27

CODEN: MAGUEO; ISSN: 0913-4867

DT Journal

LA Japanese

CC 75-1 (Crystallography and Liquid Crystals)

Section cross-reference(s): 66

AB Synthetic **Mg**-contg. **hydroxyapatites** were incubated in 0.9% NaCl soln. and 0.1 M CH₃COOK buffer soln. (pH 7.4) at 37.degree. to examine their crystallog. behavior in these solns. After 1 mo of incubation, the **Mg** content in the residual samples decreased greatly, esp., in samples with higher original **Mg** content. On the other hand, [**Mg**] in both solns. increased more than [**Ca**]. According to the decrease of **Mg** content in the residual samples, the a- and c-axis dimensions increased along the curves drawn for the original samples. This means that sol. **Mg** ions are readily released and that the **apatites** with lower **Mg** contents are recrystd. These results strongly suggest that Mg²⁺ ions can be substituted into the **apatite** crystals during synthesis. At higher **Mg** content, .beta.-TCP is formed.

ST **apatite** cation exchange **magnesium**; growth**magnesium hydroxyapatite** crystal

IT Crystal growth

(of **magnesium apatite** crystals in aq. solns.)

IT Cation exchange

(of **magnesium** by **apatite** crystals in aq. solns.)

IT 1306-06-5, **Hydroxylapatite** (Ca₅(OH)(PO₄)₃) 11089-13-7, **Magnesium hydroxide phosphate** (Mg₅(OH)(PO₄)₃) 134382-55-1

, **Calcium magnesium hydroxide phosphate**(Ca_{9.09}Mg_{0.91}(OH)₂(PO₄)₆) 134382-56-2,**Calcium magnesium hydroxide phosphate**(Ca_{6.67}Mg_{3.33}(OH)₂(PO₄)₆) 134382-90-4,**Calcium magnesium hydroxide phosphate**(Ca_{9.9}Mg_{0.1}(OH)₂(PO₄)₆) 134382-91-5,**Calcium magnesium hydroxide phosphate**(Ca_{9.52}Mg_{0.48}(OH)₂(PO₄)₆)

RL: PRP (Properties)

(cation exchange of crystals of, in aq. solns.)

IT 7439-95-4, **Magnesium**, properties 7440-70-2,**Calcium**, properties

RL: PRP (Properties)

(cation exchange of, in **apatite** crystals in aq. soln.)

IT 1306-06-5, **Hydroxylapatite** (Ca₅(OH)(PO₄)₃) 134382-55-1, **Calcium**

magnesium hydroxide phosphate (Ca_{9.09}Mg_{0.91}(OH)₂(PO₄)₆) 134382-56-2, **Calcium**

magnesium hydroxide phosphate (Ca6.67Mg3.33(OH)
)2(PO4)6) 134382-90-4, Calcium
 magnesium hydroxide phosphate (Ca9.9Mg0.1(OH)
)2(PO4)6) 134382-91-5, Calcium
 magnesium hydroxide phosphate (Ca9.52Mg0.48(OH)
)2(PO4)6)

RL: PRP (Properties)

(cation exchange of crystals of, in aq. solns.)

RN 1306-06-5 HCAPLUS

CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 134382-55-1 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca9.09Mg0.91(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.09	7440-70-2
Mg	0.91	7439-95-4

RN 134382-56-2 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca6.67Mg3.33(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	6.67	7440-70-2
Mg	3.33	7439-95-4

RN 134382-90-4 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca9.9Mg0.1(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.9	7440-70-2
Mg	0.1	7439-95-4

RN 134382-91-5 HCAPLUS

CN Calcium magnesium hydroxide phosphate (Ca9.52Mg0.48(OH)2(PO4)6) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2

Ca		9.52		7440-70-2
Mg		0.48		7439-95-4

IT 7439-95-4, **Magnesium**, properties
 RL: PRP (Properties)
 (cation exchange of, in **apatite** crystals in aq. soln.)
 RN 7439-95-4 HCAPLUS
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)

Mg

L108 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1990:425614 HCAPLUS

DN 113:25614

TI Nontoxic anticorrosive molybdate pigment

IN Hajek, Bohumil; Srank, Zlatko; Charvat, Ivo; Trnka, Jiri; Jirakova, Dagmar; Palffy, Alexander; Svoboda, Miloslav

PA Czech.

SO Czech., 3 pp.

CODEN: CZXXA9

DT Patent

LA Czech

IC ICM C09C001-00

CC 42-6 (Coatings, Inks, and Related Products)

Section cross-reference(s): 49

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CS 262306	B1	19890314	CS 1985-3626	19850521
AB	The title pigment for org. soln. and aq. dispersion varnishes has a high anticorrosion effect at a reduced content of Mo and consists of CaCO ₃ , MgCO ₃ , Ca(Mg)CO ₃ , MgO, or ZnO carriers 75-94.5, Ca ₅ (OH)(PO ₄) ₂ , (Mg, Ca) ₅ (OH)(PO ₄) ₃ , and(or) Zn ₃ (PO ₄) ₂ deposited on the carrier surface 5.0-20.0, and CaMoO ₄ , MgMoO ₄ , and(or) Zn ₅ Mo ₂ O ₁₁ .5H ₂ O 0.5-5.0%. Thus, aq. dispersion of 300 g CaCO ₃ was treated with 0.2 mol dild. H ₃ PO ₄ and then with aq. soln. contg. 2.65 g (NH ₄) ₂ MoO ₄ .4H ₂ O, filtered, washed, and dried giving the pigment contg. CaCO ₃ 88.2, Ca ₅ (OH)(PO ₄) ₃ 10.9, and CaMoO ₄ 0.9%.				

ST nontoxic anticorrosive molybdate pigment

IT Pigments

(anticorrosive, molybdenum-based, on carriers, manuf. of)

IT 471-34-1, **Calcium carbonate**, uses andmiscellaneous 546-93-0, **Magnesium carbonate**(MgCO₃) 1309-48-4, **Magnesium oxide** (MgO), uses andmiscellaneous 1314-13-2, **Zinc oxide**, uses and miscellaneous 7000-29-5

RL: USES (Uses)

(carriers, for manuf. of nontoxic anticorrosive pigments for varnishes)

IT 7543-51-3 12167-74-7, **Calcium hydroxide****phosphate** (Ca₅(OH)(PO₄)₃)127836-54-8, **Calcium magnesium****hydroxide phosphate** ((Ca,Mg)₅(OH)(PO₄)₃)

RL: USES (Uses)

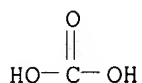
(in manuf. of nontoxic anticorrosive pigments for varnishes)

IT 7789-82-4, **Calcium molybdate** (CaMoO₄) 13767-03-8,**Magnesium molybdate** (MgMoO₄) 127814-40-8, **Molybdenum zinc oxide**(Mo₂Zn₅O₁₁)

RL: USES (Uses)

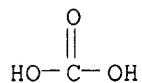
(pigment contg., anticorrosive, nontoxic, manuf. of)

IT 13106-76-8
 RL: USES (Uses)
 (treatment by, of magnesium or calcium or zinc
 carrier, in manuf. of nontoxic anticorrosive pigments for varnishes)
 IT 471-34-1, Calcium carbonate, uses and
 miscellaneous 546-93-0, Magnesium carbonate
 (MgCO₃) 1309-48-4, Magnesium oxide (MgO), uses and
 miscellaneous
 RL: USES (Uses)
 (carriers, for manuf. of nontoxic anticorrosive pigments for varnishes)
 RN 471-34-1 HCAPLUS
 CN Carbonic acid calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



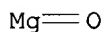
Ca

RN 546-93-0 HCAPLUS
 CN Carbonic acid, magnesium salt (1:1) (8CI, 9CI) (CA INDEX NAME)



Mg

RN 1309-48-4 HCAPLUS
 CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)



IT 12167-74-7, Calcium hydroxide
 phosphate (Ca₅(OH)(PO₄)₃)
 127836-54-8, Calcium magnesium
 hydroxide phosphate ((Ca,Mg)₅(
 OH)(PO₄)₃)
 RL: USES (Uses)
 (in manuf. of nontoxic anticorrosive pigments for varnishes)
 RN 12167-74-7 HCAPLUS
 CN Calcium hydroxide phosphate (Ca₅(OH)(PO₄)₃) (7CI, 8CI, 9CI) (CA INDEX
 NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

RN 127836-54-8 HCAPLUS
 CN Calcium magnesium hydroxide phosphate ((Ca,Mg)₅(OH)(PO₄)₃) (9CI) (CA

INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

L108 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1990:196892 HCAPLUS

DN 112:196892

TI Preparation of **tricalcium phosphate** low in
hydroxyapatite

IN Ackilli, Joseph A.; Saleeb, Fouad Z.; Morreale, Philip; McKay, Randal P.

PA General Foods Corp., USA

SO U.S., 3 pp.

CODEN: USXXAM

DT Patent

LA English

IC ICM C01B015-16

ICS C01B025-26

NCL 423308000

CC 17-6 (Food and Feed Chemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4891198	A	19900102	US 1986-894609	19860807
	CA 1328189	A1	19940405	CA 1987-542393	19870717
	IN 174328	A	19941105	IN 1989-DE472	19890530
	CN 1047661	A	19901212	CN 1989-103891	19890602
	CN 1020885	B	19930526		
PRAI	US 1986-894609	A	19860807		

OS CASREACT 112:196892

AB Prepn. of **tricalcium phosphate** (I) by the addn. of a
Ca base (e.g. **Ca(OH)2**) to an excess of **H3PO4**
under controlled temp. (40-80 .degree.F, preferably 50 .degree.F) and at
an alk. pH (8-12, preferably 11-12) results in a prepn. of I with a
greatly reduced **hydroxyapatite** content. Addn. of **Mg**(
OH)2 to form **Mg phosphates** in the prepn.
further reduces the content of **hydroxyapatite**. When this prepn.
of I is used as an additive for acid beverages it is more rapidly sol.
with a reduced insol. residue. A slurry of **Ca(OH)2**
222 g in water 800 mL was added to 2 mol of **H3PO4** (231 g 85% **H3PO4** in 1000
mL water) with continuous stirring. Temp. was maintained at .apprx.60
.degree.F by cooling in ice. The resulting slurry was spray-dried. When
this prepn. was dissolved in a citric acid soln. a clear soln. resulted,
indicating very little **hydroxyapatite** formation.

ST **tricalcium phosphate** low **hydroxyapatite** food
additive; citric acid beverage sol **tricalcium phosphate**

IT Beverages

(citric acid contg., **hydroxyapatite**-low **tricalcium**
phosphate sol. in, prepn. of)

IT 77-92-9P, Citric acid, biological studies

RL: PREP (Preparation)

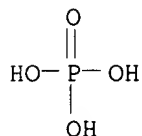
(aq. solns. of, **hydroxyapatite**-low **tricalcium**
phosphate sol. in, prepn. of)

IT 10043-83-1, **Magnesium phosphate**

RL: BIOL (Biological study)

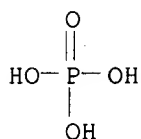
(as additive in prepn. of **hydroxyapatite**-low
tricalcium phosphate)

- IT 7758-87-4P, Tricalcium phosphate
 RL: PREP (Preparation)
 (prepn. of, **hydroxyapatite**-low, food additive sol. in acid beverages)
- IT 1305-62-0, Calcium hydroxide, reactions 7664-38-2,
 Phosphoric acid, reactions
 RL: RCT (Reactant)
 (reactions of, in prepn. of **hydroxyapatite**-low **tricalcium phosphate**)
- IT 1306-06-5P, Hydroxylapatite (Ca₅(OH)
)(PO₄)₃)
 RL: PREP (Preparation)
 (**tricalcium phosphate** low in, prepn. of, as additive for citric acid-contg. beverages)
- IT 10043-83-1, Magnesium phosphate
 RL: BIOL (Biological study)
 (as additive in prepn. of **hydroxyapatite**-low **tricalcium phosphate**)
- RN 10043-83-1 HCAPLUS
 CN Phosphoric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)



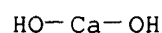
●x Mg

- IT. 7758-87-4P, Tricalcium phosphate
 RL: PREP (Preparation)
 (prepn. of, **hydroxyapatite**-low, food additive sol. in acid beverages)
- RN 7758-87-4 HCAPLUS
 CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)



3/2 Ca

- IT 1305-62-0, Calcium hydroxide, reactions
 RL: RCT (Reactant)
 (reactions of, in prepn. of **hydroxyapatite**-low **tricalcium phosphate**)
- RN 1305-62-0 HCAPLUS
 CN Calcium hydroxide (Ca(OH)₂) (9CI) (CA INDEX NAME)



IT 1306-06-5P, Hydroxylapatite (Ca₅(OH)
(PO₄)₃)
RL: PREP (Preparation)
(**tricalcium phosphate** low in, prepn. of, as
additive for citric acid-contg. beverages)
RN 1306-06-5 HCAPLUS
CN Hydroxylapatite (Ca₅(OH)(PO₄)₃) (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

L108 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2002 ACS

AN 1989:87299 HCAPLUS

DN 110:87299

TI Preparation of amorphous **calcium-magnesium phosphates** at pH 7 and characterization by x-ray absorption and Fourier transform infrared spectroscopy

AU Holt, C.; Van Kemenade, M. J. J. M.; Harries, J. E.; Nelson, L. S.; Bailey, R. T.; Hukins, D. W. L.; Hasnain, S. S.; De Bruyn, P. L.

CS Hannah Res. Inst., Ayr, KA6 5HL, UK

SO J. Cryst. Growth (1988), 92(1-2), 239-52

CODEN: JCRGAE; ISSN: 0022-0248

DT Journal

LA English

CC 78-5 (Inorganic Chemicals and Reactions)

AB Amorphous **Ca Mg phosphates** were prepd. by pptn. from moderately supersatd. aq. solns. at pH 7. Chem. anal. of the samples by ion chromatog. showed that $\sim 50\%$ of the **phosphate** ions were protonated, the proportion increasing with the **Mg** to **Ca** ion activity ratio in the soln. When left in contact with the supernatant, the amorphous ppts. matured to form the cryst. CaHPO₄·2H₂O. The amorphous phases were characterized by x-ray absorption spectroscopy and by Fourier transform IR spectroscopy and their properties compared with those of a basic amorphous **tricalcium phosphate** pptd. at pH 10. The x-ray absorption spectra near the K edge of **Ca** were very similar for all samples but there were differences in the IR spectra between the basic and the more acidic salts. In the **phosphate** stretching region, the main band of the more acidic materials occurred at higher wavenumber and was broader. Also there was a broad band of medium intensity at ~ 890 cm⁻¹ whereas there was virtually no absorption band in this region in the spectrum of amorphous Ca₃(PO₄)₂. The acidic amorphous **Ca phosphates** may be useful as model compds. in describing some complex biol. **Ca phosphates** that form near neutral pH.

ST **calcium magnesium phosphate** amorphous; EXAFS

calcium magnesium phosphate amorphous

IT X-ray spectra

(EXAFS, of amorphous **calcium magnesium phosphate**)

IT 25618-23-9P, **Calcium magnesium phosphate**

119029-00-4P, **Calcium magnesium hydroxide phosphate**

RL: SPN (Synthetic preparation); PREP. (Preparation)
(prepn. and EXAFS and IR spectra of amorphous)

IT 7778-77-0

RL: RCT (Reactant)

(reactions of, with **calcium nitrate** and **magnesium nitrate**)

IT 10377-60-3, Magnesium dinitrate
 RL: RCT (Reactant)
 (reactions of, with potassium phosphate and calcium nitrate)

IT 10124-37-5, Calcium dinitrate
 RL: RCT (Reactant)
 (reactions of, with potassium phosphate and magnesium nitrate)

IT 119029-00-4P, Calcium magnesium hydroxide phosphate
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and EXAFS and IR spectra of amorphous)

RN 119029-00-4 HCAPLUS

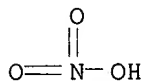
CN Calcium magnesium hydroxide phosphate (9CI) (CA INDEX NAME)

Component	Ratio	Component Registry Number
HO	x	14280-30-9
O4P	x	14265-44-2
Ca	x	7440-70-2
Mg	x	7439-95-4

IT 10377-60-3, Magnesium dinitrate
 RL: RCT (Reactant)
 (reactions of, with potassium phosphate and calcium nitrate)

RN 10377-60-3 HCAPLUS

CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)

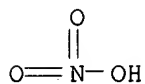


1/2 Mg

IT 10124-37-5, Calcium dinitrate
 RL: RCT (Reactant)
 (reactions of, with potassium phosphate and magnesium nitrate)

RN 10124-37-5 HCAPLUS

CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)



1/2 Ca

=> sel hit rn
 E19 THROUGH E58 ASSIGNED

=> d ide can tot 1110

L110 ANSWER 1 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN 412319-78-9 REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca4.3Mg0.7(OH)(PO4)3) (9CI) (CA INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca4.3 H Mg0.7 O13 P3
CI TIS
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4.3	7440-70-2
Mg	0.7	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:330502

L110 ANSWER 2 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN 374930-58-2 REGISTRY
CN Calcium magnesium-hydroxide phosphate (Ca1.5Mg3.5(OH)(PO4)3) (9CI) (CA INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca1.5 H Mg3.5 O13 P3
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	1.5	7440-70-2
Mg	3.5	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:8516

L110 ANSWER 3 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN 303955-05-7 REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca5Mg5(OH)2(PO4)6) (9CI) (CA INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca5 H2 Mg5 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	5	7440-70-2

Mg | 5 | 7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:8516

REFERENCE 2: 133:338788

L110 ANSWER 4 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 303955-04-6 REGISTRY

CN Calcium magnesium hydroxide phosphate (Ca4Mg(OH)(PO4)3) (9CI) (CA INDEX NAME)

MF Ca . H O . Mg . O4 P

AF Ca4 H Mg O13 P3

CI TIS

SR CA

LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	4	7440-70-2
Mg	1	7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 136:8516

REFERENCE 2: 133:338788

L110 ANSWER 5 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 303955-03-5 REGISTRY

CN Calcium magnesium hydroxide phosphate (Ca8.5Mg1.5(OH)2(PO4)6) (9CI) (CA INDEX NAME)

MF Ca . H O . Mg . O4 P

AF Ca8.5 H2 Mg1.5 O26 P6

CI TIS

SR CA

LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	8.5	7440-70-2
Mg	1.5	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 6 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 303955-02-4 REGISTRY

CN Calcium magnesium hydroxide phosphate (Ca9Mg(OH)2(PO4)6) (9CI) (CA INDEX NAME)

MF Ca . H O . Mg . O4 P

AF Ca9 H2 Mg O26 P6

CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9	7440-70-2
Mg	1	7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:24678

REFERENCE 2: 133:338788

L110 ANSWER 7 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN 303955-01-3 REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.25Mg0.75(OH)2(PO4)6) (9CI) (CA
INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca9.25 H2 Mg0.75 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.25	7440-70-2
Mg	0.75	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 8 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN 303955-00-2 REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.5Mg0.5(OH)2(PO4)6) (9CI) (CA
INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca9.5 H2 Mg0.5 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.5	7440-70-2
Mg	0.5	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 9 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 303954-99-6 REGISTRY

CN Calcium magnesium hydroxide phosphate (Ca9.75Mg0.25(OH)2(PO4)6) (9CI) (CA INDEX NAME)

MF Ca . H O . Mg . O4 P

AF Ca9.75 H2 Mg0.25 O26 P6

CI TIS

SR CA

LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.75	7440-70-2
Mg	0.25	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 133:338788

L110 ANSWER 10 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 137524-23-3 REGISTRY

CN Phosphoric acid, magnesium salt, mixt. with hydroxylapatite
(Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Hydroxylapatite (Ca5(OH)(PO4)3), mixt. contg. (9CI)

MF Ca . H3 O4 P . H O . x Mg . O4 P

AF Ca5 H O13 P3 . H3 O4 P . x Mg

CI MXS

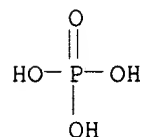
SR CA

LC STN Files: CA, CAPLUS, TOXCENTER

CM 1

CRN 10043-83-1 (7664-38-2)

CMF H3 O4 P . x Mg



x Mg

CM 2

CRN 1306-06-5

CMF Ca . H O . O4 P

CCI MNS, TIS

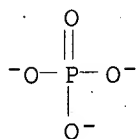
CM 3

CRN 14280-30-9
CMF H O

OH⁻

CM 4

CRN 14265-44-2
CMF O4 P



CM 5

CRN 7440-70-2
CMF Ca

Ca

2 REFERENCES IN FILE CA (1967 TO DATE)
2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 129:249236

REFERENCE 2: 115:263521

L110 ANSWER 11 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 134382-91-5 REGISTRY

CN Calcium magnesium hydroxide phosphate (Ca9.52Mg0.48(OH)2(PO4)6) (9CI) (CA INDEX NAME)

MF Ca . H O . Mg . O4 P

AF Ca9.52 H2 Mg0.48 O26 P6

CI TIS

SR CA

LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.52	7440-70-2
Mg	0.48	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 12 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 134382-90-4 REGISTRY

CN Calcium magnesium hydroxide phosphate (Ca9.9Mg0.1(OH)2(PO4)6) (9CI) (CA
INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca9.9 H2 Mg0.1 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.9	7440-70-2
Mg	0.1	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 13 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN 134382-56-2 REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca6.67Mg3.33(OH)2(PO4)6) (9CI) (CA
INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca6.67 H2 Mg3.33 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	6.67	7440-70-2
Mg	3.33	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)
1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 14 OF 18 REGISTRY COPYRIGHT 2002 ACS
RN 134382-55-1 REGISTRY
CN Calcium magnesium hydroxide phosphate (Ca9.09Mg0.91(OH)2(PO4)6) (9CI) (CA
INDEX NAME)
MF Ca . H O . Mg . O4 P
AF Ca9.09 H2 Mg0.91 O26 P6
CI TIS
SR CA
LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	2	14280-30-9
O4P	6	14265-44-2
Ca	9.09	7440-70-2
Mg	0.91	7439-95-4

1 REFERENCES IN FILE CA (1967 TO DATE)

1 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 115:18782

L110 ANSWER 15 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 127836-54-8 REGISTRY

CN Calcium magnesium hydroxide phosphate ((Ca,Mg)5(OH)(PO4)3) (9CI) (CA INDEX NAME)

MF Ca . H O . Mg . O4 P

AF Ca0-5 H Mg0-5 O13 P3

CI TIS

SR CA

LC STN Files: CA, CAPLUS, TOXCENTER

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	0 - 5	7440-70-2
Mg	0 - 5	7439-95-4

3 REFERENCES IN FILE CA (1967 TO DATE)

3 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 125:204451

REFERENCE 2: 124:216642

REFERENCE 3: 113:25614

L110 ANSWER 16 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 119029-00-4 REGISTRY

CN Calcium magnesium hydroxide phosphate (9CI) (CA INDEX NAME)

MF Ca . H O . Mg . O4 P

CI TIS

SR CA

LC STN Files: CA, CAPLUS

Component	Ratio	Component Registry Number
HO	x	14280-30-9
O4P	x	14265-44-2
Ca	x	7440-70-2
Mg	x	7439-95-4

2 REFERENCES IN FILE CA (1967 TO DATE)

2 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 130:147770

REFERENCE 2: 110:87299

L110 ANSWER 17 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 12167-74-7 REGISTRY

CN Calcium hydroxide phosphate (Ca5(OH)(PO4)3) (7CI, 8CI, 9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Calcium phosphate (Ca10(OH)2(PO4)6) (6CI)

OTHER NAMES:

CN Calcium hydroxide phosphate (Ca10(OH)2(PO4)6)

CN Calcium hydroxyphosphate (Ca10(OH)2(PO4)6)

CN Calcium hydroxyphosphate (Ca5(PO4)3OH)
 CN Calcium phosphate (Ca5OH(PO4)3)
 CN Calcium phosphate hydroxide (Ca10(PO4)6(OH)2)
 CN Calcium phosphate hydroxide (Ca5(PO4)3(OH))
 CN Calcium tribasic phosphate
 CN Decacalcium hexaphosphate dihydroxide
 CN Pentacalcium hydroxide triphosphate
 DR 1337-78-6, 29796-40-5, 205873-50-3, 221359-86-0
 MF Ca . H O . O4 P
 AF Ca5 H O13 P3
 CI COM, TIS
 LC STN Files: BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS, CHEMLIST,
 CSCHEM, IFICDB, IFIPAT, IFIUDB, IPA, MSDS-OHS, TOXCENTER, USAN,
 USPATFULL, VTB
 Other Sources: DSL**, EINECS**
 (**Enter CHEMLIST File for up-to-date regulatory information)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

1051 REFERENCES IN FILE CA (1967 TO DATE)
 80 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 1053 REFERENCES IN FILE CAPLUS (1967 TO DATE)
 30 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:147227
 REFERENCE 2: 137:112931
 REFERENCE 3: 137:112826
 REFERENCE 4: 137:98554
 REFERENCE 5: 137:97335
 REFERENCE 6: 137:66706
 REFERENCE 7: 137:40727
 REFERENCE 8: 137:36382
 REFERENCE 9: 137:24678
 REFERENCE 10: 137:9707

L110 ANSWER 18 OF 18 REGISTRY COPYRIGHT 2002 ACS

RN 1306-06-5 REGISTRY

CN Hydroxylapatite (Ca5(OH)(PO4)3) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Hydroxylapatite (8CI)

OTHER NAMES:

CN Apaceram

CN APAFILL-G

CN Apatite

CN Apatite hydroxide (Ca10(PO4)6(OH)2)

CN Bonaceram P

CN Bonfil

CN Calcium hydroxyapatite

CN Durapatite

CN FKI
 CN HAP-B
 CN Hy-Apatite
 CN **Hydroxyapatite**
 CN Interpore 200
 CN Interpore 500
 CN Monite
 CN Supertite 10
 CN Synamel
 CN Tri-Tab
 DR 12440-80-1, 136841-77-5, 196875-13-5
 MF Ca . H O . O4 P
 AF Ca5 H O13 P3
 CI MNS, COM, TIS
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,
 CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM*, DRUGU,
 EMBASE, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS,
 NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

Component	Ratio	Component Registry Number
HO	1	14280-30-9
O4P	3	14265-44-2
Ca	5	7440-70-2

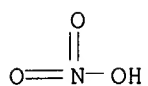
10763 REFERENCES IN FILE CA (1967 TO DATE)
 310 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 10788 REFERENCES IN FILE CAPLUS (1967 TO DATE)
 5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:147891
 REFERENCE 2: 137:145842
 REFERENCE 3: 137:145666
 REFERENCE 4: 137:145651
 REFERENCE 5: 137:145643
 REFERENCE 6: 137:145635
 REFERENCE 7: 137:145562
 REFERENCE 8: 137:145508
 REFERENCE 9: 137:145505
 REFERENCE 10: 137:145503

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L111 ANSWER 1 OF 22 REGISTRY COPYRIGHT 2002 ACS
 RN 10377-60-3 REGISTRY
 CN Nitric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN Magnesium dinitrate

CN Magnesium nitrate
CN Magniosan
DR 50908-84-4
MF H N O3 . 1/2 Mg
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO,
CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMLIST, CIN, CSCHEM,
DETERM*, DIPPR*, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, TOXCENTER,
TULSA, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)
CRN (7697-37-2)



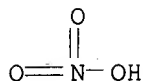
1/2 Mg

3375 REFERENCES IN FILE CA (1967 TO DATE)
44 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
3385 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:149420
REFERENCE 2: 137:149397
REFERENCE 3: 137:147680
REFERENCE 4: 137:144810
REFERENCE 5: 137:144787
REFERENCE 6: 137:144090
REFERENCE 7: 137:142126
REFERENCE 8: 137:129074
REFERENCE 9: 137:128475
REFERENCE 10: 137:127303

L111 ANSWER 2 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN 10124-37-5 REGISTRY
CN Nitric acid, calcium salt (8CI, 9CI) (CA INDEX NAME)
OTHER NAMES:
CN Calcium dinitrate
CN Calcium nitrate
CN Calcium nitrate (Ca(NO3)2)
CN Nitric acid calcium salt (2:1)
CN Norge saltpeter
CN Norway saltpeter
CN Norwegian saltpeter
CN Synfat 1006
DR 56532-05-9, 94079-75-1, 95680-75-4, 292135-47-8
MF Ca . 2 H N O3

CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO,
 CA, CABA, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST,
 CIN, CSCHEM, CSNB, DETHERM*, DIOGENES, EMBASE, ENCOMPLIT, ENCOMPLIT2,
 ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIADB, MEDLINE,
 MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER,
 TULSA, USPAT2, USPATFULL, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 CRN (7697-37-2)



1/2 Ca

5942 REFERENCES IN FILE CA (1967 TO DATE)
 51 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 5948 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:145463
 REFERENCE 2: 137:144810
 REFERENCE 3: 137:144446
 REFERENCE 4: 137:140075
 REFERENCE 5: 137:136927
 REFERENCE 6: 137:131142
 REFERENCE 7: 137:129937
 REFERENCE 8: 137:129931
 REFERENCE 9: 137:129783
 REFERENCE 10: 137:129183

L111 ANSWER 3 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 10043-83-1 REGISTRY

CN Phosphoric acid, magnesium salt (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Magnesium acid phosphate

CN Magnesium orthophosphate

CN Magnesium phosphate

MF H3 O4 P . x Mg

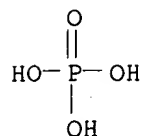
CI COM

LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CANCERLIT,
 CAPLUS, CBNB, CHEMCATS, CHEMLIST, CIN, CSNB, DIOGENES, EMBASE,
 ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT,
 IFIADB, MEDLINE, MSDS-OHS, NAPRALERT, PDLCOM*, PIRA, PROMT, TOXCENTER,
 TULSA, USPAT2, USPATFULL
 (*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (7664-38-2)



x Mg

788 REFERENCES IN FILE CA (1967 TO DATE)

14 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

788 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:145248

REFERENCE 2: 137:95301

REFERENCE 3: 137:67945

REFERENCE 4: 137:65565

REFERENCE 5: 137:53551

REFERENCE 6: 137:51521

REFERENCE 7: 137:27205

REFERENCE 8: 136:406928

REFERENCE 9: 136:345527

REFERENCE 10: 136:275832

L111 ANSWER 4 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 10043-52-4 REGISTRY

CN Calcium chloride (CaCl2) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Calcium chloride (8CI)

OTHER NAMES:

CN Bovikalc

CN Calcium dichloride

CN Calcium(2+) chloride

CN Calcosan

CN Calmate R

CN Calol

CN Calzina oral

CN Chrysoxel C 4

CN Daraccel

CN Dowflake

CN Liquidow

CN Peladow

CN Stopit

CN U-Ramin MC

DR 139468-93-2

MF Ca Cl2

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

Cl-Ca-Cl

28652 REFERENCES IN FILE CA (1967 TO DATE)

210 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

28677 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:147113

REFERENCE 2: 137:147092

REFERENCE 3: 137:146919

REFERENCE 4: 137:145646

REFERENCE 5: 137:145645

REFERENCE 6: 137:145612

REFERENCE 7: 137:145525

REFERENCE 8: 137:145226

REFERENCE 9: 137:145190

REFERENCE 10: 137:144947

L111 ANSWER 5 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7789-75-5 REGISTRY

CN Calcium fluoride (CaF2) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Calcium fluoride (8CI)

OTHER NAMES:

CN Calcium difluoride

CN Calcium difluoride (CaF2)

CN Irtran 3

DR 29070-15-3

MF Ca F2

CI COM

LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, DIOGENES, DIPPR*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

F-Ca-F

18307 REFERENCES IN FILE CA (1967 TO DATE)
203 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
18318 REFERENCES IN FILE CAPLUS (1967 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:148103

REFERENCE 2: 137:148102

REFERENCE 3: 137:147894

REFERENCE 4: 137:147147

REFERENCE 5: 137:146626

REFERENCE 6: 137:146126

REFERENCE 7: 137:145504

REFERENCE 8: 137:143576

REFERENCE 9: 137:143509

REFERENCE 10: 137:142543

L111 ANSWER 6 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7789-48-2 REGISTRY

CN Magnesium bromide (MgBr2) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Magnesium bromide (8CI)

OTHER NAMES:

CN Magnesium dibromide

DR 53168-84-6

MF Br2 Mg

CI COM

LC STN Files: AGRICOLA, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT,
CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, DETHERM*, DIOGENES, GMELIN*,
IFICDB, IFIPAT, IFIUDB, MRCK*, MSDS-OHS, PDLCOM*, PROMT, TOXCENTER,
TULSA, USPAT2, USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

Br-Mg-Br

1087 REFERENCES IN FILE CA (1967 TO DATE)
22 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1087 REFERENCES IN FILE CAPLUS (1967 TO DATE)
10 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149420

REFERENCE 2: 137:132913

REFERENCE 3: 137:114227

REFERENCE 4: 137:103111

REFERENCE 5: 137:93702
REFERENCE 6: 137:93382
REFERENCE 7: 137:78852
REFERENCE 8: 137:65292
REFERENCE 9: 137:62903
REFERENCE 10: 137:33696

L111 ANSWER 7 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7789-41-5 REGISTRY

CN Calcium bromide (CaBr₂) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Calcium bromide (6CI, 8CI)

OTHER NAMES:

CN Calcium dibromide

MF Br₂ Ca

CI COM

LC STN Files: AGRICOLA, AQUIRE, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, DIOGENES, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, PDLCOM*, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

Br-Ca-Br

1093 REFERENCES IN FILE CA (1967 TO DATE)
22 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
1093 REFERENCES IN FILE CAPLUS (1967 TO DATE)
53 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:132913
REFERENCE 2: 137:130323
REFERENCE 3: 137:103111
REFERENCE 4: 137:86000
REFERENCE 5: 137:82792
REFERENCE 6: 137:81235
REFERENCE 7: 137:65522
REFERENCE 8: 137:65292
REFERENCE 9: 137:65280
REFERENCE 10: 137:65206

L111 ANSWER 8 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7786-30-3 REGISTRY

CN Magnesium chloride (MgCl₂) (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN Magnesium chloride (6CI, 7CI, 8CI)
OTHER NAMES:
CN Aerotex Accelerator MX
CN Catalyst G
CN Magnesium dichloride
CN Magnogene
CN TMT 2
DR 12285-34-6, 77069-22-8
MF Cl2 Mg
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM*, DIOGENES,
DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*,
HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC,
PDLCOM*, PHAR, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2,
USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

Cl-Mg-Cl

21450 REFERENCES IN FILE CA (1967 TO DATE)
509 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
21468 REFERENCES IN FILE CAPLUS (1967 TO DATE)
13 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149420
REFERENCE 2: 137:147649
REFERENCE 3: 137:147548
REFERENCE 4: 137:145645
REFERENCE 5: 137:145495
REFERENCE 6: 137:145226
REFERENCE 7: 137:145190
REFERENCE 8: 137:144947
REFERENCE 9: 137:144885
REFERENCE 10: 137:144823

L111 ANSWER 9 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN 7783-40-6 REGISTRY
CN Magnesium fluoride (MgF2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Magnesium fluoride (8CI)
OTHER NAMES:
CN Afluon
CN Irtran 1
CN Magnesium difluoride
CN Magnesium difluoride (MgF2)
MF F2 Mg
CI COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, CA, CANCERLIT, CAOLD, CAPLUS,

CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*,
EMBASE, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS,
NIOSHTIC, PHARMASEARCH, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USPAT2,
USPATFULL, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

F-Mg-F

7132 REFERENCES IN FILE CA (1967 TO DATE)
63 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7137 REFERENCES IN FILE CAPLUS (1967 TO DATE)
38 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149420

REFERENCE 2: 137:148102

REFERENCE 3: 137:147147

REFERENCE 4: 137:146783

REFERENCE 5: 137:146774

REFERENCE 6: 137:146126

REFERENCE 7: 137:132913

REFERENCE 8: 137:132236

REFERENCE 9: 137:131999

REFERENCE 10: 137:131998

L111 ANSWER 10 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7783-28-0 REGISTRY

CN Phosphoric acid, diammonium salt (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Akoustan A

CN Ammonium dibasic phosphate

CN Ammonium hydrogen phosphate

CN Ammonium hydrogen phosphate ((NH4)2HPO4)

CN Ammonium monohydrogen orthophosphate

CN Ammonium monohydrogen phosphate

CN Ammonium orthophosphate dibasic

CN Ammonium phosphate ((NH4)2(HPO4))

CN Ammonium phosphate dibasic

CN Coaltrol LPA 445

CN Diammonium acid phosphate

CN Diammonium hydrogen orthophosphate

CN Diammonium hydrogen phosphate

CN Diammonium hydrogen phosphate ((NH4)HPO4)

CN Diammonium monohydrogen phosphate

CN Diammonium orthophosphate

CN Diammonium phosphate

CN Dibasic ammonium phosphate

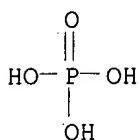
CN Hydrogen diammonium phosphate

CN K 2

CN K 2 (phosphate)

CN Pelor

CN Phos-Chek 202A
 CN Phosphoric acid ammonium salt (1:2)
 CN Secondary ammonium phosphate
 MF H3 N . 1/2 H3 O4 P
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, CA, CABA,
 CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM,
 CSNB, DDFU, DETHERM*, DIPPR*, DRUGU, GMELIN*, HSDB*, IFICDB, IFIPAT,
 IFIUDB, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, TOXCENTER,
 TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 CRN (7664-38-2)



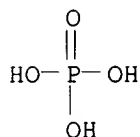
● 2 NH₃

4800 REFERENCES IN FILE CA (1967 TO DATE)
 54 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 4804 REFERENCES IN FILE CAPLUS (1967 TO DATE)
 16 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145463
 REFERENCE 2: 137:145430
 REFERENCE 3: 137:142587
 REFERENCE 4: 137:139970
 REFERENCE 5: 137:139413
 REFERENCE 6: 137:129931
 REFERENCE 7: 137:126543
 REFERENCE 8: 137:126533
 REFERENCE 9: 137:116063
 REFERENCE 10: 137:110704

L111 ANSWER 11 OF 22 REGISTRY COPYRIGHT 2002 ACS
 RN 7758-87-4 REGISTRY
 CN Phosphoric acid, calcium salt (2:3) (8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN .alpha.-Tricalcium phosphate
 CN .beta.-TCP
 CN .beta.-Tricalcium phosphate
 CN .beta.-Whitlockite
 CN Apamicron AP 12C
 CN Bonarka
 CN Calcium orthophosphate

CN Calcium orthophosphate (Ca₃(PO₄)₂)
 CN Calcium phosphate
 CN Calcium phosphate (3:2)
 CN Calcium phosphate (Ca₃(PO₄)₂)
 CN Calcium tertiary phosphate
 CN Multifos
 CN Ostram
 CN Phosphoric acid calcium(2+) salt (2:3)
 CN Posture
 CN Posture (calcium supplement)
 CN Synthograft
 CN Synthos
 CN TCP
 CN TCP 10
 CN Tertiary calcium phosphate
 CN Tribasic calcium phosphate
 CN Tricalcium diphosphate
 CN Tricalcium orthophosphate
 CN Tricalcium phosphate
 CN Tricalcium phosphate (Ca₃(PO₄)₂)
 DR 1344-15-6, 123211-19-8
 MF Ca . 2/3 H3 O4 P
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,
 CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU,
 EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*,
 MSDS-OHS, NIOSHTIC, PDLCOM*, PHAR, PIRA, PROMT, TOXCENTER, TULSA,
 USPAT2, USPATFULL, VETU, VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 CRN (7664-38-2)



3/2 Ca

5766 REFERENCES IN FILE CA (1967 TO DATE)
 100 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 5776 REFERENCES IN FILE CAPLUS (1967 TO DATE)
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145643
 REFERENCE 2: 137:145622
 REFERENCE 3: 137:145500
 REFERENCE 4: 137:145485
 REFERENCE 5: 137:145466
 REFERENCE 6: 137:145465

REFERENCE 7: 137:145464

REFERENCE 8: 137:145463

REFERENCE 9: 137:145448

REFERENCE 10: 137:145439

L111 ANSWER 12 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7758-23-8 REGISTRY

CN Phosphoric acid, calcium salt (2:1) (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Acid calcium phosphate

CN C 38

CN C 38 (phosphate)

CN Calcium biphosphate

CN Calcium bis(dihydrogen phosphate)

CN Calcium dihydrogen orthophosphate

CN Calcium dihydrogen phosphate

CN Calcium diorthophosphate

CN Calcium hydrogen phosphate (Ca(H₂PO₄)₂)

CN Calcium monobasic phosphate

CN Calcium orthophosphate monobasic

CN Calcium phosphate (1:2)

CN Calcium phosphate (Ca(H₂PO₄)₂)

CN Calcium phosphate monobasic

CN Calcium phosphate, primary

CN Calcium superphosphate

CN Calcium tetrahydrogen orthophosphate

CN Calcium tetrahydrogen phosphate

CN Monobasic calcium phosphate

CN Monocalcium orthophosphate

CN Monocalcium phosphate

CN Monocalcium phosphate (Ca(H₂PO₄)₂)

CN V 90

MF Ca . 2 H3 O4 P

CI COM

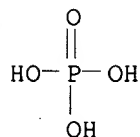
LC STN Files: AGRICOLA, AQUIRE, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CINC, CSCHEM, DETHERM*, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, TOXCENTER, USPAT2, USPATFULL

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (7664-38-2)



1/2 Ca

1880 REFERENCES IN FILE CA (1967 TO DATE)

16 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

1883 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:140001

REFERENCE 2: 137:139968
REFERENCE 3: 137:139736
REFERENCE 4: 137:129946
REFERENCE 5: 137:127131
REFERENCE 6: 137:125177
REFERENCE 7: 137:124739
REFERENCE 8: 137:110485
REFERENCE 9: 137:110323
REFERENCE 10: 137:110208

L111 ANSWER 13 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7757-93-9 REGISTRY

CN Phosphoric acid, calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

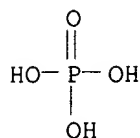
CN A-Tab
CN Anhydrous Emcompress
CN Biofos
CN Calcium acid phosphate
CN Calcium dibasic phosphate
CN Calcium hydrogen orthophosphate
CN Calcium hydrogen phosphate
CN Calcium hydrogen phosphate (CaHPO4)
CN Calcium monohydrogen orthophosphate
CN Calcium monohydrogen phosphate
CN Calcium orthophosphate (CaHPO4)
CN Calcium phosphate (1:1)
CN Calcium phosphate (CaHPO4)
CN Calcium secondary phosphate
CN D.C.P. 340
CN DCP
CN DCPA
CN Dibasic calcium phosphate
CN Dicafos AN
CN Dicalcium orthophosphate
CN Dicalcium phosphate
CN Fujicalin
CN Fujicalin S
CN Ipifosc 20
CN Monocalcium acid phosphate
CN Monocalcium phosphate
CN Monohydrogen calcium phosphate
DR 17248-11-2, 155420-92-1, 53168-52-8, 288297-00-7
MF Ca . H3 O4 P
CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, TOXCENTER, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (7664-38-2)



Ca

4306 REFERENCES IN FILE CA (1967 TO DATE)
32 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
4310 REFERENCES IN FILE CAPLUS (1967 TO DATE)
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145504
REFERENCE 2: 137:145485
REFERENCE 3: 137:145344
REFERENCE 4: 137:140001
REFERENCE 5: 137:139995
REFERENCE 6: 137:139968
REFERENCE 7: 137:139736
REFERENCE 8: 137:129946
REFERENCE 9: 137:129937
REFERENCE 10: 137:129891

L111 ANSWER 14 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7757-87-1 REGISTRY

CN Phosphoric acid, magnesium salt (2:3) (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Magnesium phosphate (Mg₃(PO₄)₂)

CN Tribasic magnesium phosphate

CN Trimagnesium diorthophosphate

CN Trimagnesium diphosphate

CN Trimagnesium phosphate

DR 9079-62-3, 83677-34-3

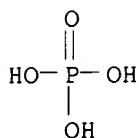
MF H3 O4 P . 3/2 Mg

LC STN Files: BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS,
CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DRUGU, GMELIN*, HSDB*, IFICDB,
IFIPAT, IFIUDB, MRCK*, MSDS-OHS, TOXCENTER, USAN, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (7664-38-2)



3/2 Mg

614 REFERENCES IN FILE CA (1967 TO DATE)
 54 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 616 REFERENCES IN FILE CAPLUS (1967 TO DATE)
 9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:68178
 REFERENCE 2: 137:8642
 REFERENCE 3: 136:389043
 REFERENCE 4: 136:315590
 REFERENCE 5: 136:308528
 REFERENCE 6: 136:189313
 REFERENCE 7: 136:123590
 REFERENCE 8: 136:107585
 REFERENCE 9: 136:5270
 REFERENCE 10: 135:307182

L111 ANSWER 15 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 7558-80-7 REGISTRY

CN Phosphoric acid, monosodium salt (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Dihydrogen monosodium phosphate

CN Dihydrogen sodium phosphate

CN Monobasic sodium phosphate

CN Monobasic sodium phosphate (NaH₂PO₄)

CN Monosodium dihydrogen orthophosphate

CN Monosodium hydrogen phosphate

CN Monosodium phosphate

CN Sodium dihydrogen monophosphate

CN Sodium dihydrogen orthophosphate

CN Sodium dihydrogen phosphate

CN Sodium dihydrogen phosphate (NaH₂PO₄)CN Sodium hydrogen phosphate (NaH₂PO₄)CN Sodium monobasic phosphate (NaH₂PO₄)

CN Sodium orthophosphate monobasic

CN Sodium phosphate (Na(H₂PO₄))

CN Sodium phosphate, monobasic

CN Sodium primary phosphate

DR 1333-80-8, 89140-32-9

MF H3 O4 P . Na

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST,

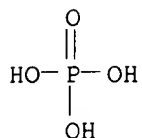
CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, GMELIN*,
 HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PIRA,
 PROMT, RTECS*, TOXCENTER, USAN, USPAT2, USPATFULL, VETU

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (7664-38-2)



Na

4508 REFERENCES IN FILE CA (1967 TO DATE)

39 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

4513 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:146895
 REFERENCE 2: 137:141044
 REFERENCE 3: 137:129950
 REFERENCE 4: 137:128244
 REFERENCE 5: 137:126684
 REFERENCE 6: 137:124740
 REFERENCE 7: 137:124475
 REFERENCE 8: 137:124466
 REFERENCE 9: 137:118596
 REFERENCE 10: 137:116050

L111 ANSWER 16 OF 22 REGISTRY COPYRIGHT 2002 ACS

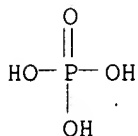
RN 7558-79-4 REGISTRY

CN Phosphoric acid, disodium salt (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN Acetest
 CN Anhydrous sodium acid phosphate
 CN Dibasic sodium phosphate
 CN Disodium acid orthophosphate
 CN Disodium acid phosphate
 CN Disodium hydrogen orthophosphate (Na2HPO4)
 CN Disodium hydrogen phosphate
 CN Disodium hydrophosphate
 CN Disodium monohydrogen phosphate
 CN Disodium orthophosphate
 CN Disodium phosphate
 CN Disodium phosphate (Na2HPO4)
 CN DSP
 CN Exsiccated sodium phosphate
 CN Hydrogen disodium phosphate

CN Hydrogen sodium phosphate (HNa2PO4)
 CN Monohydrogen disodium phosphate
 CN Soda Phosphate
 CN Sodium monohydrogen phosphate
 CN Sodium orthophosphate dibasic
 CN Sodium phosphate (Na2HPO4)
 CN Sodium phosphate, dibasic
 DR 148560-76-3
 MF H3 O4 P . 2 Na
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,
 BIOTECHNO, CA, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST,
 CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DIPPR*, DRUGU, EMBASE, GMELIN*,
 HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*,
 PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU,
 VTB
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 CRN (7664-38-2)



2 Na

5529 REFERENCES IN FILE CA (1967 TO DATE)
 40 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 5536 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:147113
 REFERENCE 2: 137:145645
 REFERENCE 3: 137:145637
 REFERENCE 4: 137:145575
 REFERENCE 5: 137:145485
 REFERENCE 6: 137:141044
 REFERENCE 7: 137:139638
 REFERENCE 8: 137:129901
 REFERENCE 9: 137:129587
 REFERENCE 10: 137:128244

L111 ANSWER 17 OF 22 REGISTRY COPYRIGHT 2002 ACS
 RN 7439-95-4 REGISTRY
 CN Magnesium (8CI, 9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN JIS 1
 CN Magnesium element

CN PK 31
CN PK 31 (magnesium)
CN Rieke's active magnesium
DR 14147-08-1, 67208-78-0, 199281-20-4, 298688-48-9
MF Mg
CI COM
LC STN Files: ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA,
CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX,
CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT,
ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, NIOSHTIC, TOXCENTER, ULIDAT,
USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(*Enter CHEMLIST File for up-to-date regulatory information)

Mg

153813 REFERENCES IN FILE CA (1967 TO DATE)
6044 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
153955 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:149438
REFERENCE 2: 137:149425
REFERENCE 3: 137:149422
REFERENCE 4: 137:149402
REFERENCE 5: 137:149384
REFERENCE 6: 137:149380
REFERENCE 7: 137:149370
REFERENCE 8: 137:149197
REFERENCE 9: 137:148908
REFERENCE 10: 137:148368

L111 ANSWER 18 OF 22 REGISTRY COPYRIGHT 2002 ACS

RN 1309-48-4 REGISTRY

CN Magnesium oxide (MgO) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 1000A
CN 100A
CN 100A (oxide)
CN 500A
CN 995S
CN AM 2
CN AM 2 (cement additive)
CN Animag
CN Anscor P
CN BayMag
CN Calcined magnesia
CN Causmag
CN Caustic magnesite
CN Elastomag 100
CN Elastomag 170

CN Fert-O-Mag
CN FloMag HP
CN FloMag HP-ER
CN FMR-PC
CN H 10
CN H 10 (oxide)
CN Hamag LP
CN HP 10
CN HP 10 (oxide)
CN HP 10N
CN HP 30
CN HP 30 (oxide)
CN Insulmag 4
CN KM 3
CN KM 3 (oxide)
CN KM 40
CN KMAOH-F
CN KMB 100-200
CN Kyowaad 100
CN Kyowamag 100
CN Kyowamag 150
CN Kyowamag 150B
CN Kyowamag 150C
CN Kyowamag 20
CN Kyowamag 30
CN Kyowamag 40
CN Kyowamag 60
CN Kyowaway 150
CN Liquimag A
CN Liquimag B
CN Luvatol MK 35
CN Mag Chem 10
CN Mag Chem 10-200
CN Mag Chem 10-325
CN Mag Chem 10-40

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
DISPLAY

DR 13589-16-7, 82375-77-7, 52933-73-0, 185461-91-0, 187036-80-2

MF Mg O

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,
CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT,
ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NIOSHTIC, PHARMASEARCH, PIRA, PROMT, RTECS*, TOXCENTER, TULSA,
ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB

(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

Mg==O

71311 REFERENCES IN FILE CA (1967 TO DATE)

769 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

71377 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:149441

REFERENCE 2: 137:149432

REFERENCE 3: 137:149114
REFERENCE 4: 137:148642
REFERENCE 5: 137:148585
REFERENCE 6: 137:148483
REFERENCE 7: 137:148457
REFERENCE 8: 137:148359
REFERENCE 9: 137:148217
REFERENCE 10: 137:148204

L111 ANSWER 19 OF 22 'REGISTRY COPYRIGHT 2002 ACS

RN 1309-42-8 REGISTRY

CN Magnesium hydroxide (Mg(OH)2) (9CI) (CA INDEX NAME)

OTHER NAMES:

CN 10A

CN 200-06H

CN Alcanex NHC 25

CN Asahi Glass 200-06

CN Combustrol 500

CN Daimushew 6000

CN DP 393

CN DSB 100

CN Duhor

CN Duhor N

CN Ebson RF

CN Finemag MO-T

CN Finemag SN-L

CN FloMag H

CN FloMag HUS

CN FR 20

CN FR 20-310

CN Hydrofy G 1.5

CN Hydrofy G 2.5

CN Hydrofy N

CN Ki 22-5B

CN Kisma KX 4SU

CN Kisuma

CN Kisuma 120

CN Kisuma 2

CN Kisuma 3A

CN Kisuma 4AF

CN Kisuma 5

CN Kisuma 5A

CN Kisuma 5A-N

CN Kisuma 5AU

CN Kisuma 5B

CN Kisuma 5B-N

CN Kisuma 5BG

CN Kisuma 5E

CN Kisuma 5EU

CN Kisuma 5J

CN Kisuma 7B

CN Kisuma KX 4SU

CN Kisuma S 4

CN KX 4S

CN KX 80

CN KX 8S(A)

CN KX 8S(B)
CN Kyowamag F
CN Lycal 96HSE
CN Mag Chem MH 10
CN MagneClear 58
CN Magnesia hydrate
CN Magnesia Magma

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
DISPLAY

DR 12195-86-7, 13760-51-5

MF H2 Mg O2

CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,
CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMLIST,
CIN, CSCHEM, CSNB, DDFU, DETHERM*, DIOGENES, DRUGU, EMBASE, ENCOMPLIT,
ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA,
MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*,
TOXCENTER, TULSA, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

HO-Mg-OH

10451 REFERENCES IN FILE CA (1967 TO DATE)
149 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
10461 REFERENCES IN FILE CAPLUS (1967 TO DATE)
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:145571

REFERENCE 2: 137:145561

REFERENCE 3: 137:145234

REFERENCE 4: 137:142548

REFERENCE 5: 137:142514

REFERENCE 6: 137:141600

REFERENCE 7: 137:141572

REFERENCE 8: 137:141571

REFERENCE 9: 137:141509

REFERENCE 10: 137:141497

L111 ANSWER 20 OF 22 REGISTRY COPYRIGHT 2002 ACS
RN 1305-62-0 REGISTRY
CN Calcium hydroxide (Ca(OH)2) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Calcium hydroxide (8CI)
OTHER NAMES:
CN A-Rock
CN Biocalc
CN Galbit
CN Calbreed
CN Calcium dihydroxide
CN Caldic 1000

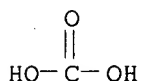
CN Calvit
CN Carboxide
CN CH 2N
CN CLS-B
CN Hydralime
CN Hydrated lime
CN Kalkhydrate
CN Kentoku K 100
CN Limbux
CN Lime hydrate
CN Lime milk
CN Lime water
CN Milk of lime
CN NICC 3000
CN Rhenofit CF
CN SA 074
CN Slaked lime
CN Super Microstar
CN TP 2B
CN Yukijirushisakanyo
DR 7719-01-9, 1333-29-5
MF Ca H2 O2
CI COM
LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO,
CA, CABA, CANCERLIT, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT,
ENCOMPPAT2, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NIOSHTIC, PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA,
USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

HO-Ca-OH

20961 REFERENCES IN FILE CA (1967 TO DATE)
242 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
20981 REFERENCES IN FILE CAPLUS (1967 TO DATE)

REFERENCE 1: 137:145607
REFERENCE 2: 137:145464
REFERENCE 3: 137:145463
REFERENCE 4: 137:145430
REFERENCE 5: 137:145234
REFERENCE 6: 137:145085
REFERENCE 7: 137:144779
REFERENCE 8: 137:144769
REFERENCE 9: 137:144755
REFERENCE 10: 137:144460

RN 546-93-0 REGISTRY
 CN Carbonic acid, magnesium salt (1:1) (8CI, 9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Magnesium carbonate (6CI, 7CI)
 OTHER NAMES:
 CN Apolda
 CN C.I. 77713
 CN Carbonate magnesium
 CN DCI Light Magnesium Carbonate
 CN Destab
 CN Gold Star
 CN Gold Star (carbonate)
 CN GP 20
 CN GP 20 (carbonate)
 CN GP 30
 CN GP 30 (carbonate)
 CN Kimboshi
 CN MA 70 (carbonate)
 CN Magfy
 CN Magnesium carbonate (1:1)
 CN Magnesium carbonate (MgCO3)
 CN Stan-Mag Magnesium Carbonate
 AR 7757-69-9
 DR 1784-39-0, 183480-27-5, 364320-47-8
 MF C H2 O3 . Mg
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOBUSINESS, BIOSIS, BIOTECHNO,
 CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, DDFU, DETHERM*, DIOGENES, DRUGU,
 EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*,
 IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NAPRALERT, NIOSHTIC,
 PDLCOM*, PIRA, PROMT, RTECS*, TOXCENTER, TULSA, USAN, USPAT2, USPATFULL,
 VETU, VTB
 (*File contains numerically searchable property data).
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)
 CRN (463-79-6)



Mg

6066 REFERENCES IN FILE CA (1967 TO DATE)
 111 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 6075 REFERENCES IN FILE CAPLUS (1967 TO DATE)
 19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:147778
 REFERENCE 2: 137:146089
 REFERENCE 3: 137:145571
 REFERENCE 4: 137:145535
 REFERENCE 5: 137:145248

REFERENCE 6: 137:142898

REFERENCE 7: 137:135090

REFERENCE 8: 137:129962

REFERENCE 9: 137:129725

REFERENCE 10: 137:129326

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RN 471-34-1 REGISTRY

CN Carbonic acid calcium salt (1:1) (8CI, 9CI) (CA INDEX NAME)

OTHER NAMES:

CN .mu.-Powder 3N

CN .mu.-Powder 3S

CN 150B

CN 3N-A

CN ACE 25

CN ACE 35

CN Aeromatt

CN Akadama

CN Albacar

CN Albacar 5970

CN Albacar HO

CN Albacar LO

CN Albafil

CN Albaglos

CN Albaglos S

CN Albaglos SF

CN Allied Whiting

CN ASK 5

CN ASK 5 (carbonate)

CN Atomite

CN Atomite SSA 2114

CN AX 363

CN B 1002

CN BF 100

CN BF 100 (carbonate)

CN BF 200

CN BF 2000

CN BF 200S

CN BF 300

CN BFK 200

CN BKS 5

CN BL 50

CN BL 50 (antacid)

CN Brilliant 15

CN Brilliant 1500

CN Brilliant BR 15

CN Brilliant S 15

CN BS 32

CN BSK 5

CN BSK 5D

CN C 50

CN C 50 (carbonate)

CN C.I. 77220

CN C.I. Pigment White 18

CN Cal-light 3A

CN Cal-light A 7

CN Cal-light AS

CN Cal-light KT

CN Cal-light SA

CN Calcene CO

ADDITIONAL NAMES NOT AVAILABLE IN THIS FORMAT - Use FCN, FIDE, or ALL for
DISPLAY

AR 15187-75-4

DR 166516-01-4, 172307-27-6, 60083-79-6, 63660-97-9, 114453-69-9,
137803-94-2, 72608-12-9, 71060-88-3, 146358-95-4, 39454-55-2, 180616-31-3,
251358-28-8

MF C H2 O3 . Ca

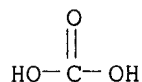
CI COM

LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS,
BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,
CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM*,
DIOGENES, DIPPR*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT,
ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*,
MSDS-OHS, NAPRALERT, NIOSHTIC, PDLCOM*, PHARMASEARCH, PIRA, PROMT,
RTECS*, TOXCENTER, TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB
(*File contains numerically searchable property data)

Other Sources: DSL**, EINECS**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)

CRN (463-79-6)



Ca

46618 REFERENCES IN FILE CA (1967 TO DATE)

290 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

46666 REFERENCES IN FILE CAPLUS (1967 TO DATE)

5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

REFERENCE 1: 137:149198

REFERENCE 2: 137:148521

REFERENCE 3: 137:147778

REFERENCE 4: 137:147087

REFERENCE 5: 137:147008

REFERENCE 6: 137:146897

REFERENCE 7: 137:145504

REFERENCE 8: 137:145485

REFERENCE 9: 137:145431

REFERENCE 10: 137:145430

=> d his

(FILE 'HOME' ENTERED AT 09:06:15 ON 31 AUG 2002)
SET COST OFF

FILE 'REGISTRY' ENTERED AT 09:06:35 ON 31 AUG 2002

E HYDROXYAPATITE/CN
L1 1 S E3
L2 14 S 1306-06-5/CRN

FILE 'REGISTRY' ENTERED AT 09:07:29 ON 31 AUG 2002

FILE 'REGISTRY' ENTERED AT 09:08:15 ON 31 AUG 2002
L3 1 S L2 AND MG/ELS

FILE 'HCAPLUS' ENTERED AT 09:10:24 ON 31 AUG 2002
L4 10789 S L1
L5 21688 S CA5 OH PO4 3 OR HYDROXYLAPATITE OR HYDROXYAPATITE OR HYDROXY#
L6 22737 S APACERAM OR APAFILL OR APATITE OR APATITE HYDROXIDE OR CA10 P
L7 40910 S L4-L6
L8 10789 S L4 AND L7
L9 30121 S L5,L6,L7 NOT L8
L10 1066 S L1/P AND L8

FILE 'REGISTRY' ENTERED AT 09:13:42 ON 31 AUG 2002
L11 1 S MAGNESIUM/CN
 E MAGNESIUM/CN
 E MAGNESIUM HYDROXY/CN
 E MAGNESIUM, I/CN
 E MAGNESIUM, IO/CN
 E MAGNESIUM, ION/CN
L12 1 S E4
L13 1 S E17
 E HYDROXYLAPATITE, MAGNESIUM/CN
 E H MG5 O13 P3/MF
 E CA.HO.MG/MF
L14 19 S E12
L15 875 S (14280-30-9 AND 14265-44-2 AND 7440-70-2)/CRN
L16 83 S L15 AND MG/ELS
L17 82 S L16 AND 7439-95-4/CRN
L18 1 S L16 NOT L17
L19 63 S L17 NOT L14
L20 31 S L19 NOT (F OR CL OR BR OR I)/ELS
L21 15 S L20 NOT FE/ELS
L22 5 S L21 NOT 3812-32-6/CRN
L23 20 S L14,L18
L24 19 S L23 NOT L3

FILE 'HCAPLUS' ENTERED AT 09:24:24 ON 31 AUG 2002
L25 2 S L3
L26 12 S L24
L27 13 S L25,L26 AND L7,L10
L28 14 S L25,L26,L27

FILE 'REGISTRY' ENTERED AT 09:34:01 ON 31 AUG 2002
L29 1 S 12167-74-7
L30 2 S L1,L29

FILE 'HCAPLUS' ENTERED AT 09:34:47 ON 31 AUG 2002
L31 11455 S L30
L32 11208 S L31 AND L5,L6
L33 11455 S L31,L32
L34 29537 S L5,L6 NOT L33
L35 13 S L25-L28 AND L33,L34
L36 14 S L25-L28,L35

FILE 'REGISTRY' ENTERED AT 09:36:21 ON 31 AUG 2002
L37 1 S 7783-28-0
L38 1 S 7722-76-1

L39 13526 S 7664-38-2/CRN
 L40 508 S L39 AND H3N
 L41 22 S L40 AND 2/NC
 L42 13 S L41 NOT IDS/CI
 L43 11 S L42 NOT 15N
 L44 11 S L37,L38,L43
 L45 1 S 1309-42-8
 L46 1 S 1305-62-0

FILE 'HCAPLUS' ENTERED AT 09:38:45 ON 31 AUG 2002

L47 161905 S L11,L12,L13
 L48 251 S L47 AND L33
 L49 504 S L47 AND L34
 L50 755 S L48,L49
 L51 4640 S L33,L34 AND (MG OR MAGNESIUM)
 L52 4749 S L50,L51
 L53 185 S L52 AND (L46 OR (CA OR CALCIUM) ()HYDROXIDE OR CA OH 2 OR CAO H
 L54 39 S L53 AND (L45 OR (MG OR MAGNESIUM) ()HYDROXIDE OR MG OH 2 OR MG
 L55 3 S L54 AND (L44 OR DIAMMONIUM HYDROGEN PHOSPHATE)

FILE 'REGISTRY' ENTERED AT 09:41:38 ON 31 AUG 2002

L56 8 S (MAGNESIUM CARBONATE OR MAGNESIUM BROMIDE OR MAGNESIUM CHLORI
 L57 9 S (CALCIUM CARBONATE OR CALCIUM BROMIDE OR CALCIUM CHLORIDE OR
 L58 8 S (AMMONIUM PHOSPHATE OR CALCIUM PHOSPHATE OR MAGNESIUM PHOSPHA
 L59 6598 S 463-79-6/CRN
 L60 3 S L59 AND MG/ELS AND 2/NC NOT (IDS OR MNS)/CI
 L61 11670 S 7697-37-2/CRN
 L62 4 S L61 AND MG/ELS AND 2/NC NOT (IDS OR MNS)/CI
 L63 2 S L62 NOT (GLYCINATO OR KAPPA)
 L64 7 S L39 AND MG/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
 L65 18 S L45,L56,L60,L63,L64
 L66 11 S L59 AND CA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
 L67 3 S L66 NOT (40CA OR 42CA OR 43CA OR 45CA OR 46CA OR 44CA OR LYSI
 L68 4 S L61 AND CA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
 L69 13 S L39 AND CA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
 L70 11 S L69 NOT 45CA#
 L71 19 S L57,L70,L46
 L72 15 S L39 AND NA/ELS AND 2/NC NOT (IDS OR MNS OR CCS OR MXS)/CI
 L73 13 S L72 NOT (PROPANEDIOL OR FNA)
 L74 42 S L44,L64,L70,L73

FILE 'HCAPLUS' ENTERED AT 09:57:51 ON 31 AUG 2002

L75 568 S L65 AND L52
 L76 683 S L65 AND L33,L34
 L77 683 S L75,L76
 L78 513 S L77 AND L71
 L79 235 S L78 AND L74
 L80 22 S L79 AND L30/P
 L81 167 S L79 AND L30
 L82 3 S L79 AND L36
 L83 10 S L36 AND L65,L71,L74
 L84 10 S L82,L83
 L85 4 S L36 NOT L84
 L86 14 S L84,L85 AND L4-L10,L25-L28,L31-L36,L47-L55,L75-L85
 L87 14 S L86 AND (CA OR CALCIUM OR PO4 OR PHOSPHATE OR OH OR HYDROXY#
 L88 14 S L86 AND (?CALCIUM OR ?PHOSPHATE OR ?HYDROXY OR ?MAGNESIUM OR
 L89 14 S L87,L88
 E RIMAN R/AU
 L90 102 S E3,E4,E6,E7,E8
 E SUCHANEK W/AU
 L91 32 S E3,E6,E7
 E WOJCIECH/AU
 E SHUK P/AU

L92 61 S E3-E6
E³ TENHUISEN K/AU
L93 25 S E4,E6-E8
E TEN HUISEN K/AU
E TEN H/AU
E HUISEN/AU
L94 213 S L90-L93
L95 35 S L94 AND L33,L34
L96 1 S L95 AND L52
L97 0 S L95 AND L89
L98 35 S L95 AND L4-L10,L25-L28,L31-L36,L47-L55,L75-L97
L99 18 S L98 AND L65,L71,L74
L100 0 S L99 AND L47,L36
L101 1 S L99 AND (MG OR MAGNESIUM)
L102 15 S L96,L101,L89
L103 22 S L80 NOT L102
SEL DN AN 7 10 11 15 18 22
L104 6 S L103 AND E1-E18
L105 21 S L102,L104
L106 21 S L105 AND (MG OR CA OR PO4 OR MAGNESIUM OR CALCIUM OR PHOSPHAT
L107 4 S L106 AND (NH3 OR AMMON?)
L108 17 S L106 NOT L107

FILE 'HCAPLUS' ENTERED AT 10:25:08 ON 31 AUG 2002

SEL HIT RN

FILE 'REGISTRY' ENTERED AT 10:25:44 ON 31 AUG 2002

L109 40 S E19-E58
L110 18 S L109 AND L1,L2,L24,L30
L111 22 S L109 NOT L110